Gleanings in Bee Culture

October, 1945.....Vol. 73, No. 10

Honey Production and *Wintering* in Alberta

By R. E. English, Supervisor
Office of Information, Department of Agriculture, Alberta, Canada

The first statistics on beekeeping in Alberta cover production for the year 1924, when 160 beekeepers produced 55,000 lbs. of honey. Since that time the industry has steadily expanded. In 1944, 9,100 beekeepers, operating 57,000 colonies produced a record of 5,130,000 lbs. of honey. The summary table below shows production for each third intervening year:

Year	No. of Beekeepers	No. of hives	Prod. per hive	Total Prod.
1927	200	3,450	87	300,000
1930	170	4,450	222	990,000
1933	320	5,800	172	1,000,000
1936	1,150	12,180	152	1,850,000
1939	1,590	18,000	121	2,178,000
1942	3,800	27,500	91	2,502,500

Alberta honey yields are good; the highest, 222 lbs. per colony (1930); lowest, 56 lbs. (1925); twenty-year average 126 lbs. However, since fewer than one third of our colonies are prepared for winter, at the completion of extracting a relatively small percentage of the crop is left on the hives.

Our first Provincial Apiarist (S. O. Hillerud) was appointed in 1929. The problem of reducing losses sustained because of the failure of package queens received his attention. He reported in 1931, "Supersedure of package queens was common, and cases were reported where 40% of the queens were superseded. Many of the queens which did not supersede were poor, and the colonies failed to build up beyond 50% of their normal strength." He suggested that trouble with package bees increased the tendency to turn toward attempts to winter.

Winter losses, however, have likewise been heavy. In 1942-'43, mortality among the colonies wintered was reported to be 46%; while the lowest loss, in 1939-'40, was 25%. True, the amateur beekeeper or beginner loses most heavily, but the same class loses most in establishing packages.

That little or no progress toward solving the problem has been made is indicated in the 1943 and 1944 reports of W. G. leMaistre*, present Provincial Apiarist. "The considerable increase in package failures (1941, 10%; 1942, 14%; 1943, 22%) noticed in the past two seasons requires investigation. The uncertainty of obtaining packages and the increase in their cost has led to a considerably larger number of colonies being wintered." In the winter of 1943-'44, however, 44% of the colonies placed in winter quarters were lost, as against 18% of packages placed in the spring. The reaction of beekeepers is indicated by Mr. leMaistre's further statement that: "Very little progress seems to have been made in wintering colonies."

In spite of the above figures, however, there is no justification for the

*The assistance of W. G. le Maistre, Provincial Apiarist, is acknowledged.

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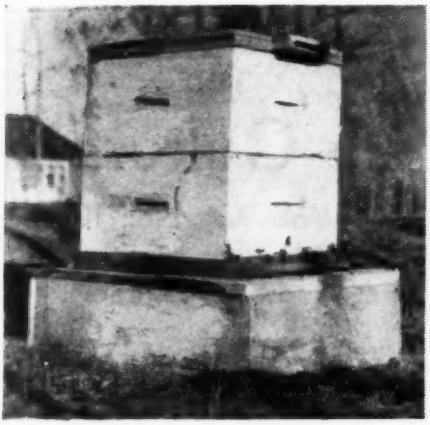


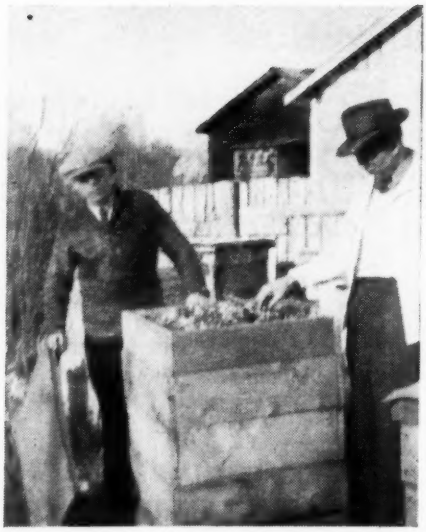
No. 1.—Hive with top board containing entrance in place and ready to pack.

heavy winter losses of bees that occur. Our winter climate is variable but not often severe. As shown in the table below lower temperatures obtain in the north; but even there warm spells almost invariably permit a flight in January and again in February. Such flights are an advantage by reducing restlessness and excessive brood rearing at this time of the year. As a matter of fact the percentage of colonies wintered in the central (Edmonton) area indicates that, as compared to package bee honey production, greatest advantage from wintering may be expected in northern districts. At Keg River, 610 miles north of the U. S. boundary, Dr. Mary Jackson winters bees regularly and successfully.

AVERAGE SEASONAL TEMPERATURES AT SELECTED ALBERTA POINTS

Appr. Latitude	Lethbridge 50°	Edmonton 54°	Keg River 58°
Sept. 1-Nov. 30	43°	38°	31°
Dec. 1-Feb. 28	16°	10°	- 6°
Mar. 1-May 31	40°	38°	30°
June 1-Aug. 31	62°	59°	57°

Wintering problems in Southern Alberta probably compare much more closely with those encountered in Montana and Idaho than at Edmonton. However, the differences are largely in the nature of timing and involve summer as much as winter management. Our succession of principal honey plants include dandelion, alsike and white clover, sweet clover, alfalfa, and fireweed. In the south prairie crocuses are utilized in the spring and willows in



No. 2.—Hive showing dry leaves piled on top as insulation. (Author at left.)

the North. Proceeding northward bloom is later and characterized by a greater number of nectar-producing native plants.

Limited data accumulated at the Dominion Experimental Station, Beaverlodge, shows that outside and cellar wintered colonies yielded an average of 91 and 101 pounds of honey respectively on the basis of colony count when wintering commenced. However, the practice of wintering in cellars is relatively limited. Most beekeepers find proper ventilation, uniform temperature, and dryness too difficult to secure in cellar wintering. Mrs. W. E. Hallows of Peavine is one of the exceptions to the rule. She cites reduced labor and feed costs as heavily in favor of cellar wintering. She claims too, that colonies divided after the main honey flow will build up sufficiently to winter successfully in a cellar but would show a high percentage loss if packed outside.

Experiments on wintering bees outside have been conducted by H. T. Luther of the Dominion Experimental Station at Lethbridge. Colonies wrapped singly in two layers of paper, an inside wrapping of building paper with tarred paper outside, and a sack of shavings on top sustained fewer losses and contained stronger bees in the spring than colonies packed in cases.

RESULTS OF LETHBRIDGE EXPERIMENTS

Packaging*	1-col. cases	2-col. cases	4 col. cases	1-col. paper wrap.
Winter % strong in spring	70.3%	77.4%	95.84%	90.4%
Initial cost of packing	$3.65	$2.60	$2.16	20c
Stores consumed	36 lbs.	35 lbs.	31 lbs.	32 lbs.

*With bottom entrances reduced to 4" x ⅝".

We might add that routine practice in preparing the hives for winter at Lethbridge are:

1, a vigorous laying queen introduced no later than the first of August.

2, stores consisting of 35 lbs. of wholesome honey and 15 pounds of sugar.

3, protection from wind.

Limited experiments with paper wrapping have been conducted at Edmonton with little success. However, the advisability of using relatively light packing is indicated. Two or three inches of insulation seems to provide all the protection necessary against rapid downward changes in temperature, and is conducive to stimulation of flights in warm spells. Moreover, light packing might be expected to permit greater activity in brood rearing in the spring.

The single-colony tar paper pack is gaining in popularity. The paper is cut large enough to allow about three inches of packing and to permit sealing of the bottom and side pieces. The writer, however, uses rough wooden cases, 24" x 22" inside measurements, in the construction of which no attempt is made to have the sections fit closely, the idea being to keep the packing dry by assuring ventilation. Whether the tar paper or wooden cases constructed as indicated above are most satisfactory is not determined. The latter, perhaps, gives greater assurance that the packing is kept dry but at the cost of some insulating value. The practical application of the ideas involved should perhaps be more carefully studied.

In most areas of this province (Lethbridge Experimental Station results to the contrary) the top entrance is pretty well regarded as an essential feature for good wintering. The size of most entrances is 3" to 5" x ⅝". Since the winter cases might not be removed until nearly the middle of May an entrance of

No. 3.—Hive ready for winter. Note the top cover is not placed tightly in case.

good size seems advisable. Regardless of its size (within reason) the bees seem to regulate hive ventilation, the channel in most cases being at least partially filled with active bees even in sub-zero weather.

However, the greatest advantage of the top entrance is that, in providing ventilation, moisture is given ready escape and the hive kept dry. This is very important under our conditions. It gives one satisfaction to note the accumulation of frost at the top entrance when temperatures are 30° or 40° below zero, testimony to the fact that moisture is not being allowed to congeal within the hive.

Most careful beekeepers in Alberta have learned that bees can be wintered successfully here. The decision to winter or not, however, depends upon net profits on operation of wintered colonies as compared to profits on package bee honey production. United States bee breeders have given attention to the development of strains of bees that do well as package stock. Unfortunately, a majority of the colonies wintered here each year are derived directly from the latter breeding. Indeed we have no alternative since we have not developed Alberta-adapted strains of bees and

(Continued on page 440)

Snap Shots of the Michigan Summer Meeting

By H. H. Root

The state summer meeting at Frankenmuth on Aug. 2, was very well attended. At most of the sessions and at the banquet in the evening more than 200 were present.

The meeting at Ironton was smaller, as was to be expected, but at least 50 were present.

State Inspector Don Barrett reported that there were 13 counties in Michigan that had appropriated money for inspection but no work had been done as yet because of the shortage of inspectors.

Mr. Barrett referred to an apiary of 48 colonies of bees with little to work on except a 30-acre field of sweet clover. From practically this one source alone, 3000 lbs. of honey had already been extracted.

One reason why legumes yield less than under former conditions is that when harvested, or cut for seed, tractors and other modern machinery cut the time down to a small fraction of that required when the work was done by horses. The more rapid harvesting means a shorter blooming period.

Russell H. Kelty favors a higher ceiling for honey, does not believe that a higher ceiling would have an inflationary tendency on account of the fact that so many other commodities have increased in price again and again.

Mr. Kelty is frankly afraid of DDT. Mr. Hambleton, on the other hand, thinks there is quite a possibility that the use of DDT instead of arsenicals, especially if its use is controlled, may not kill many bees. DDT is applied to the foliage, not to the blossom. Bees seldom visit foliage.

Kelty appealed to all producers to stick with the game. He cautioned against the indiscriminate buying of package bees, pointing out that April 15 is about the best time for arrival in northern Michigan. A package installed a month later will produce a super less of honey. Packages in-

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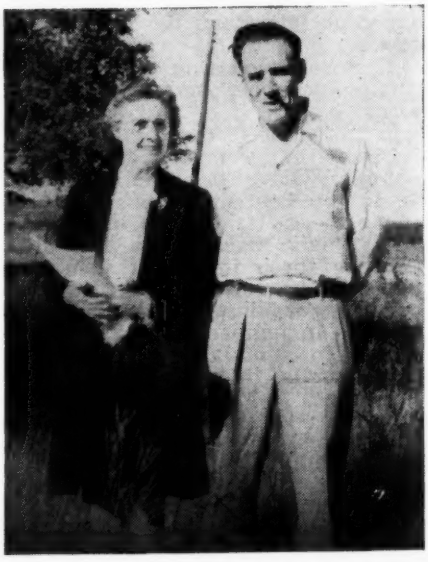
The crowd at Frankenmuth, Mich. R. H. Kelty talking.



Mr. and Mrs. W. G. Garnett. Picture taken on August 2.

Below: Honey house of Ralph Blackman, at Elk Rapids, Mich.

R. H.

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The Angles in a Cell of Honeycomb

By Allen Latham

On page 331 is an article headed "Bees Solved a Problem." In a way the bees apparently solved this problem, but I assert that they were simply forced to such a solution.

The writer of this article may mean to suggest that bees have that intelligence, and surely Maeterlinck would make such a suggestion but we should not go that far, for bees do all things through the force of inherited habit or instinct, and practically everything they do is the result of a natural necessity—forced upon the bee by simple physical laws.

The cell angles are a natural phenomenon. If bubbles could be forced against each other so that they took forms similar to comb cells they would have those angles. I have for years been anxious to try an experiment, but never seem to get around to do so. Therefore, I shall describe the proposed experiment and there may be someone with time and patience to carry it out.

Enclose in some adhesive substance 11 glass tubes all about one-fourth inch with their ends all even. Make two such assemblies of tubes. About one end adjust a rubber cup to which a tube is attached. Make a solution of soap or film forming liquid and dip each assembly of tubes into same. Place the two assemblies in contact so that a tube of each comes opposite the intersection of three tubes in the other. Of course, there will not be a perfect contact of that nature all over, but there will be several such contacts. Now very gently drive air into the tubes moving them at the same time slowly apart.

I never have tried this but I predict that if the experiment is carried out with care and with a solution giving a strong film the result will be a small bit of honeycomb made of film.

Now the bees never used any intelligence as we understand the term in making their comb. I shall tell here just what happens when a swarm builds a new comb. One bee, or two or more, come to the warmest part of the surface to which the swarm clings and there deposit wax so that a little lump results. Other bees come and add to that lump and begin to make a hollow in it at one side. Then two bees start hollows adjacent to this one but opposed to it. Then two other bees start hollows alongside the first and opposed to the two opposite. Then other bees start hollows adjacent to those but below and always in the intersections of those above. We now have an angular wax wall hanging down with half a dozen or so hollows on the two sides.

Other bees add wax and start walls between the hollows, and at the same time still other bees are starting hollows which both widen and extend downward the sheet. As wax is added and in every hollow a bee is working there results a pressure similar in a way to that of the air in the bubbles.

As bees work on both sides and in every growing cell they are continuously working against the wax against each other. If one bee gnaws through the other bee will close the opening with wax—the bees working until the wax is thin as tissue and smooth and intact.

Though I have not seen every bit of such work by the bees with my eyes I have seen enough to know that I am right in what I have just written. Bees are simply forced by natural laws to get a result which gives the angles spoken of in the article mentioned above. It came about by no expenditure of logical thought, unless we admit that bees think enough to be very economical in the use of wax while they build comb.

I question whether they do think that, for the simple reason that I have often seen comb built that did not show economy in its building. Much depends upon the supply of wax and also upon the demand for more storage room. Bees under slow honey gathering will build waxy and tough comb and under profuse nectar flows will build very fragile and tender combs. Do not believe this unless you wish to, but it is true. In my 61 years in the study of bee-behavior I have seen it occur too many times to harbor any doubt about its truth.

In my earlier years I was inclined to grant to the bee an iota or so of

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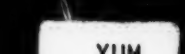


Upping Wax Production

By Clarence Tontz

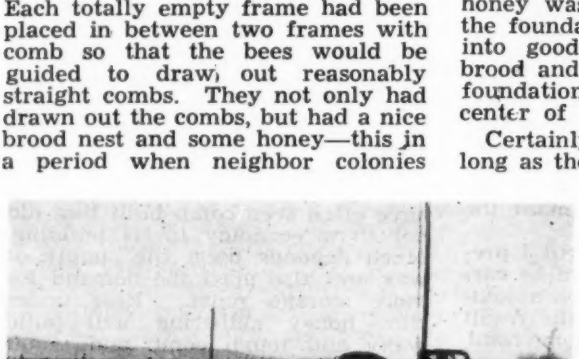
Editor Deyell's article on securing extra wax (Gleanings, May, 1945, p. 191) caused me to recall a few incidents regarding bee behavior along this line. In the latter part of June we moved some bees to an irrigated alfalfa region on the Mojave desert. On examination two weeks later it appeared that no gain had been made. However, on one colony there had been placed a super with some frames missing. In this space the bees had drawn out several combs. Perhaps they drew their reserve of honey to produce this wax, but I rather doubt it.

On another occasion I bought several colonies of bees from a beekeeper in Burbank after he had done a pretty good job of taking most of the honey. From one colony he had not only taken the honey from the super, but had removed every bit of honey from the brood chamber. To replace the combs of honey he put in five empty frames. When I bought the bees he said that this colony had made good progress since he had robbed them. I was inclined to doubt his story inasmuch as my own colonies (most of them fairly strong) had made little progress in the period mentioned. However, when I opened the hive, I found the beekeeper was right. Each totally empty frame had been placed in between two frames with comb so that the bees would be guided to draw out reasonably straight combs. They not only had drawn out the combs, but had a nice brood nest and some honey—this in a period when neighbor colonies were making no noticeable gain.

I am sold on the idea of providing full sheets of foundation whether it be a brood frame, super frame, or section. Also I believe, of course, that the average beekeeper will secure a great deal more honey if he will provide his bees with extracting combs rather than supers of foundation. But I believe there are means by which bees may be exploited for increased wax production at no sacrifice of surplus honey. You will note that I say **surplus** honey. That for every particle of wax produced honey must be consumed by the bees there is no doubt. But this wax to be produced profitably would undoubtedly have to be secreted during times when nectar is only "dribbling in."

Getting the bees to draw out frames of full sheets of foundation during periods when only forage plants are yielding nectar is perhaps more satisfactory than producing combs from starter foundation during the honey flow. This past season I managed to persuade my bees to draw out some full sheets of foundation into combs simply by removing a couple of combs, containing mainly honey, from the brood nest and replacing them with frames of foundation. Even though little honey was coming in at the time, the foundation was soon drawn out into good combs and filled with brood and honey. These frames of foundation were placed near the center of the brood nest.

Certainly it must be true that as long as there is a little nectar com-



Although some of the stronger colonies in this apiary failed to store any surplus honey or to draw out foundation in shallow supers, the colony in the foreground built some combs to replace frames accidentally left out.

ing in and brood rearing continues some wax could be produced. This wax might just as well go to the beekeeper as to the bottom of the hive. In this way the beekeeper can secure extra combs during a light flow in which to catch the crop at the times when it comes in almost faster than the inside bees can handle it.

I have often read in bee literature that in the southern states the honey flow is light and drawn out as compared to the northern region's heavy flows of brief duration. As far as I have experienced and observed this is not exactly true. It is true that the actual season is long and drawn out, but the major flows often come on with a rush and last only a week or two. A colony of bees, for example, has been known to store around 200 pounds of surplus honey from orange blossom in ten days. The major part of sage (black and purple) honey that our own bees gathered this past season was harvested perhaps in two seven-day periods. The periods were separated by foggy, cool weather.

Some beekeepers maintain that you cannot obtain good brood combs unless you have them drawn out directly over the brood nest during a heavy honey flow. As I mentioned previously, I secured good brood combs in the brood chamber itself. Here the major flows are often cut off before a standard full-depth super of foundation can be fully drawn out. Also the fact cannot be ignored that bees have an annoying habit of turning some good brood combs into cull combs even after they have been used several years. The solution, of course, is to sort combs occasionally, keeping only the good ones in the brood chamber. Any kind of comb, as long as it is reasonably straight, will suffice in the extracting super.

Los Angeles, Calif.

Excerpts From Federation News Letter

By Glenn O. Jones

Sec.-Treas., National Federation

I take this opportunity to extend my personal greetings to all beekeepers.

When I was offered this job as Secretary-Treasurer of the National Federation, I accepted it as an opportunity to do the kind of work I enjoy; an opportunity to bring together all the different ideas and ideals and trials and problems of beekeepers in such a way that the ideas and ideals may be extended and perpetuated, and the trials and problems may be minimized or eliminated; an opportunity for all the beekeepers to be bound together by their common interests rather than be held apart by their small differences.

The duties and responsibilities I inherited from Dr. Milum cannot be taken lightly. Whether beekeepers can or cannot combine their resources and abilities for the better solution of their problems will be determined by the rise or fall of the Federation. Its success will insure progress along all lines of beekeeping activity. Its failure would probably leave the beekeeping industry without any national voice for at least a generation. It **must** grow.

I have just returned from Grand Valley, Colorado, where I spent nearly a week with Mr. Holzberlein, the President of the Federation. We discussed policies of the past and of the future and found we were in agreement on all the fundamentals.

State and County and Regional associations are the foundation and starting point of the Federation. They must have all possible assistance from the Federation to enable them to grow and to function in the best interest of their membership. This is not to say that all associations need help but that we should be prepared to help when needed. It is well within the province of the Federation to assist in forming beekeepers associations in those areas where there is now none.

Individual memberships at five dollars per year were provided for at the last annual meeting, and these individual memberships are of the utmost importance at the present time because they are the source of a large part of the finances of the organization. We have a few less than five hundred at the present time, and we need several thousand if our program is to be extended as we feel it should be extended.

Off to a Good Start

By Mrs. Benj. Nielsen

Honey bran waffles.—Photo courtesy Kellogg Co.

Have trouble getting them up of a morning? We used to "hint" and prod them a bit with tantalizing bacon or ham aromas. Now that, for the majority of us, these two have "gone to war" we have to hunt around for an effective substitute to lure sleepy heads to the breakfast table. Let griddle cakes, waffles, and French toast do the prodding. Use honey as a part of their make-up—not just on top—and those sleepy heads who turn over for another forty winks will come bounding and sniffing demanding, "Gee, Mom, what's cookin'?!" Of course, that isn't a quote for the older, more dignified members of the family, but they will be curious, too.

Never tried honey IN this grand old trio? Do! Not a lot to be sure; just enough to give that grand elusive, appetite-provoking flavor, and impart a picture-making, golden brown exterior that you simply must see to fully appreciate.

Honey, as you know, furnishes that quick energy so necessary to start the day off right—and now with butter demanding so many of our precious points, a honey topping for this old-faithful trio serves a dual purpose, and is a delightful taste treat to boot. It goes like this: Make a syrup of 1 cup of honey, 4 tablespoons melted butter, ¼ teaspoon cinnamon, and a dash of nutmeg. Spices may be omitted if desired.

Do try these eye-openers to get your sleepy heads up and off to a good start.

Honey Bran Waffles

Two eggs, separated, 1½ cups milk, 1 tablespoon honey, ¾ cup bran, 1½ cups sifted flour, 4 teaspoons baking powder, 1 teaspoon salt, and ¼ cup melted shortening.

Beat egg yolks well; add milk and honey and mix thoroughly. Add bran and let soak until most of moisture is taken up. Sift flour with baking powder and salt; add to first mixture and stir only until flour disappears. Add shortening. Fold in stiffly beaten egg whites. Bake in hot waffle iron until no steam is visible. Yield: 7 waffles.

Honey Griddle Cakes

Two beaten eggs, 2 cups milk, 2 tablespoons melted shortening, 3 cups sifted flour, 1 teaspoons salt, 4 teaspoons baking powder, and 2 tablespoons honey.

Combine eggs, honey, milk, and shortening. Add flour, sifted with salt and baking powder. Beat until smooth. Bake on ungreased griddle, turning only once. Makes 12 to 15 cakes.

If you would prefer to use sour milk or buttermilk, reduce flour to 2½ cups, use ½ teaspoon salt, 1 teaspoon baking powder and add 1 teaspoon soda.

Honey French Toast

Dip slices of bread in mixture of 1 cup milk, 2 beaten eggs, 2 tablespoons honey, and ½ teaspoon salt. Fry until golden brown in a small amount of hot fat. Serve piping hot with honey.

Quick Honey Buckwheat Cakes

One cup buckwheat flour, 1 cup sifted white flour, 1 teaspoon salt, 4 teaspoons baking powder, 1 beaten egg, 2 tablespoons honey, 2¼ cups milk, and 4 tablespoons melted shortening.

Sift flour, salt and baking powder together; add egg, honey, milk, and shortening. Beat smooth and bake on ungreased griddle. If you wish to use sour milk, add 1 teaspoon soda and reduce baking powder to 2 teaspoons.

It Works in Florida

By William H. Burrows

This is not a story of a new discovery. It is only additional testimony in favor of old—but often doubted—truths, with slight modifications of manipulation to suit a prevailing condition in Florida.

The blunt facts of the case are that with proper manipulation, it is possible to procure about twice as much orange-blossom honey per hive (around 100 pounds) as is usually procured. Also, substantial increases in palmetto-gallberry (mixed flow in many places), and fall honey including goldenrod and flat top can be obtained.

The proper manipulation is not far different from that recommended in reliable bee books. It consists of being sure of having good queens, using two-story hives, leaving plenty of honey on the bees after the fall flow is over and, in most places in Florida, in stimulating feeding from six to eight weeks before the orange-blossom flow.

Once the hives have been built up to strength, the bees will usually wind up the fall flow with their top stories full of honey and from two to four combs of honey in the lower story. In addition, a shallow super full of honey should be left on through the late fall months. This super of honey is not always used up before the orange-blossom flow, but it is never wasted.

Brood stimulation should be started at least six weeks before the expected orange-blossom flow. This is done with a Boardman entrance feeder with one or two pin holes in the cover, adjusted so that the bees use about a pint each day. Feed honey-water half and half, or sugar syrup one part sugar to two parts water. In six weeks the hives will be crammed with bees and plenty of sealed brood in both chambers. Unless hives are in this condition at the beginning of the orange-blossom flow, the maximum crop is not secured.

When orange bloom appears, extract anything left in the shallow supers—save the honey for next feeding—and get the wet combs back on the hives. Then be ready to super for upwards to 100 pounds per hive. As soon as the orange bloom is over, all honey above the top story of the hive can be extracted and the wet combs rushed back on the hives. With any moderately good palmetto - gallberry flow they will be filled again.

I like to leave about half of this palmetto-gallberry honey on until after the fall flow is over, extracting only enough to obtain an empty shallow super or two for each hive. In my locality the fall flow is not too dependable.

When the fall flow is over, I extract down to the previously-mentioned stores, which is usually one shallow super above the two-storied hives. In some instances, if the stores in the hive bodies are not up to about 50 pounds, I leave two shallow supers above.

What do you get for this extra manipulation? In my experience of three years, the average take of surplus saleable honey is almost doubled in hives so treated. Furthermore, the saleable honey is mostly the top-grade orange-blossom honey and very good grade palmetto-gallberry honey. Of the latter, DON'T forget to save about 20 pounds for each hive for next brood stimulating feeding. To this will be added any honey left to extract at next orange-blossom time.

In addition to extra honey, I find that troubles with wax worms and ants are almost absent in these strong colonies. With any reasonable care, such troubles can be completely overcome.

Don't neglect any part of the routine the year around and expect results. I have checked several complaints of beekeepers who claimed they could get as much honey by letting the bees have their own way, and in every case they either did not use double hives, nor stimulate brood rearing, nor check their queens. They had tried one or two of these things, but failed in others, usually in the brood - stimulating feeding.

In this routine all queens should be checked a week or two after beginning of brood stimulation. At that time any queens that have not got started with a good brood nest should be replaced. At that time they are easy to find, for there are not so many bees in the hives, and new queens are well accepted during the feeding period.

Kissimmee, Florida

Eighty Years Among the Bees

By E. R. Root

Langstroth, Ninety Years Ago, in Line With Present Trends on Wintering

I have been rereading Langstroth's original book of 1853-'57, and I must say that I am amazed how that genius who invented the movable frame was in line with present day trends in the thinking and practices on the subject of wintering. It would be unwise and unsafe to attempt to make a brief of what he said. Some perhaps might draw different conclusions so we will let his own exact words speak for themselves. On the subject of dampness which we consider so harmful to good wintering, he says in the first edition of his book of 1853:

"This dampness, which causes what may be called a rot among the bees, is one of the worst enemies with which the apiarian in a cold climate has to contend, as it weakens or destroys many of his best colonies. No extreme cold ever experienced in latitudes where bees flourish can destroy a strong colony well supplied with honey, except indirectly, by confining them to empty combs. They will survive our coldest winters in thin hives* raised on blocks to give a freer admission of air, or even in suspended hives, without any bottom board at all. Indeed, in cold weather a very free admission of air is necessary in such hives to prevent the otherwise ruinous effects of frozen moisture; and hence the common remark that bees require as much or more air in winter than in summer."

In the next two or three paragraphs he says that protection against extremes of heat and cold is a point of very first importance, but later on, in his Appendix of the 1857 edition, he reverses himself as will be seen in that which follows:

"While the results of last winter taught me the need of upward ventilation and a more free communication among the combs the numerous experiments of this winter have convinced me that I have over-estimated the benefits to be derived from thoroughly protected hives. Today (Jan. 14, 1857), I have opened three hives and carefully examined the combs, and find their condition to be as follows: (No. 1) a good stock of bees in a thin hive with abundant upward ventilation, the spare honey board being entirely removed. In the main hive there was a very little frost (the thermometer this morning being 10¼ degrees below zero), and the bees were dry and lively. The central combs contained eggs and unsealed worms. (No. 2) A stock equally strong in a thin hive long enough to hold 18 frames. The bees with their combs occupied the eight central frames; the other frames had no combs. This hive had no upward ventilation and contained much frost. The central combs had eggs and unsealed worms. (No. 3) A hive most thoroughly protected by dead-air spaces all around and having upward ventilation, the holes in its honey-board being all left open. This hive was about as frosty as No. 1 and its central combs had eggs and worms, a few of which were sealed over. It had a better stock of bees than the others but appeared to have commenced breeding only a few days earlier.

"The results of these examinations show that where there is a good supply of food and bees, breeding commences about the same time, being influenced very little by the thickness or thinness of the hives. Bees can breed only in such combs as they can densely cover, and, as shown in No. 2, however large the cold and unoccupied space in their hive, they are able to develop their brood in these combs. No amount of protection which could possibly be given to the hive would enable them to rear a single bee except in the warm combs on which they are clustered. Bees kept in large garret-closets where their combs occupy but a small part of the enclosed space are exposed often to a very severe temperature. In such situations, however, they are able to breed in the depth of winter, and I believe that they would thrive, even if their combs were hung in an open shed and merely protected from the wind. I would sooner risk them in such a situation than in a damp hive however well protected.

"Jaunary 20, 1857: This month, the coldest on record for more than 50 years has furnished the most decisive proof of the correctness of the views advanced in this Appendix on wintering bees in the open air. My colonies have been exposed to a temperature of 30 degrees below zero, the mercury for two days never having risen above 6 degrees below, and the wind blowing a strong gale the whole time! I have today carefully examined the thin hive (No. 1, p. 359) and find the bees to be very healthy. The central comb is almost entirely filled with sealed brood nearly mature; the combs are free from any appearance of mold, and the interior of the hive is very dry. The spare honey-board was covered on its under side with straw wrapping paper, and elevated by tacks on its corners about half an inch. In all my hives where I have adopted this arrangement not a particle of dampness is found to settle over the bees. The value of intercommunicating passages through the combs has this winter been most fully tested; and its importance can hardly be overestimated. For the last few days a thaw has set in which has not injured the hive having upward ventilation, although it has filled with dampness the few which were purposely left without it."

Again in his book of 1859, he says:

"In the winter of 1855-'56 I had twenty stocks standing in a row, all but one of which would have been regarded as in a g o o d condition for wintering—not too tight below, nor yet too open above. One was in a hive suspended twenty inches from the ground and without any bottom board. The chamber for surplus honey-boxes was open to the north; and had eight one-inch holes all uncovered.

"I left home about the 12th of February, the weather being very cold, and the hives all banked up with drifted snow. Returning the last of the month, I examined the whole row and found

* He means here single-walled hives.

the nineteen thawed out, but in a sadly wet and miserable plight. If I could have taken them into a room out of the reach of the frost, until they were dry, they might have been saved. The weather changed to severe freezing before the next morning and all the nineteen swarms soon died; while the one that was apparently so neglected came out strong and healthy. Before adopting upward ventilation, I had lost my best swarms in this way, until I became discouraged."

One might almost gather the opinion that Langstroth in 1879 believed that bees would do well if the bottom board were taken off entirely, and that in order to kill them they should be heavily packed. He would make no such statement if he were alive today. The only part that I want to bring out is this, that we need to pay more attention to what is in the hive rather than what is outside of the hive. Langstroth believed emphatically in sunshine—lots of it. He was in favor of what he calls "thin hives" (single walled hives) so that the sunshine could penetrate to the cluster, allowing it to move over to fresh stores. Time and time again I have seen clusters of bees in hives well packed in a single story after a very cold winter actually starve to death with honey within an inch and a half of the cluster. The hives were heavily packed, but when the sun came out out in mid-winter, it did not warm the cluster so it could move over.

I gather from these quotations that Langstroth, if living today, would take particular note of locality, temperature, and the amount of moisture present. Present practices today show that bees in the Rockies are wintered in single-walled hives but they are two and three story colonies. It is very dry. On the other side of the Rockies where it is damp and moist, bees are generally packed.

After reviewing all of the literature I make this statement: That beekeepers, beginners especially, should follow the practices of local beekeepers who have had long years of experience. If they pack, by all means pack, but be very sure that means are provided for the escape of moisture, for remember that Langstroth was the first to recommend upper entrances. (I shall refer to this at another time.) Upper entrances— why?— because they allow the moisture to escape and bees suffering from dysentery to fly out and rid their miserable presence from the colony.

I shall quote Langstroth further in several issues to follow. I shall likewise quote from my father, who, after having tried out heavy packing in the severe winter of 1881, lost most of his bees, saving about 10% of very weak colonies which he reenforced with black bees in the spring, bought from box-hive beekeepers. These box hives were not packed but had plenty of ventilation, knot holes here and there, and he supposed that it was the strain of bees that would stand a hard winter better than the Italians. He was mistaken on this. It was the fresh air and dryness that saved them in that severe winter of '80 and '81.

PRIEST-DIRECTOR OF SCHOOL-WORKSHOP IN VENEZUELA AIDS HIS RURAL PARISHIONERS

H. H. Root - Rev. Rafael Eugenio - E. R. Root

The Rev. Rafael Eugenio, director of a school-workshop for rural students in Libertad de Tachira, Venezuela, was the guest of The A. I. Root Company, on August 7 to 10. He came to the United States as the guest of the Department of State in Washington, D. C.

He conferred with officers of the Department of Agriculture and of the agricultural divisions of the United States Office of Education, the National Catholic Welfare Conference, and the Pan American Union. His tour of the United States included representative rural schools, cooperatives, and demonstration farms, with a special visit to Boys' Town.

Father Eugenio plans to take back to Venezuela modern methods of beekeeping in U. S. Honey production at present in Venezuela is in its infancy.

From the Field of Experience

STRAW VS. PAPER PACKING FOR MINNESOTA

By E. E. Salge

The last two years I have found that some of the large commercial beekeepers are turning away from the straw pack and are using only a paper wrap with six to eight inches of straw only on top of the hives. The top entrance is being used, usually by means of an opening under the inner cover or by a tunnel from the escape hole. My theory is that a colony packed in straw has more protection than one packed in paper alone, since it would take a longer period of time for the cold to penetrate the pack and reach the bees in the hive. Beekeepers who are now using the paper-wrap method come back with the answer that the warmth of the sun would penetrate the pack faster and reach the bees sooner and thus give the bees a chance oftener to warm up enough to move to new stores. They admit, however, that with the hive warming up easier and oftener, bees are more often flying with the result that more bees are lost with this type of pack than with the straw pack where they would remain colder and thus not attempt to fly as often. Here it appears to be logical that they would also remain cold enough so that they would or could not move on the new stores.

The main thing that I cannot make myself admit is that the top entrance is best because of moisture escaping. It seems logical that the moisture would escape better but it appears to me that the warmth would escape just as freely and leave the hive colder all of the time, requiring the bees to generate more heat. It seems to me if an entrance between the two bodies were used it would still permit quite a lot of moisture to escape and at the same time at least permit a part of the hive to hold the colony heat. In other words, there would still be a warm pocket in the upper story.

I would like to get away from the straw pack method as it is quite a lot more work than with the paper wrap method from what I have heard about the latter method. Still I cannot convince myself that it is as good or better than the straw pack.

Strandquist, Minn.

BAG WINTERING

By A. H. W. Birch

Damp packing is largely responsible for much of our poor wintering.

This may be overcome by making a large tar paper bag exactly similar to the paper bag you carry your groceries home in.

The size of the bag must be such that it will slip over a one or a two story hive easily. And in place of glue, asphalt cement should be used to cement the joints together.

Such a bag will prevent the moisture which comes from within the hive by the consumption of stores, passing into the packing material.

If a top entrance is used, care must be taken to ensure a tight joint at the entrance to prevent moisture leaking into the packing.

Whatever packing material is used is placed outside the tar paper, and being dry, it will be of full value.

Montreal, Canada

BEES VS. TOMATOES

By Merna Shelley

Harry Whitcombe, a bee expert in the town of Davis, California, has filed a suit for a restraining order against Herbert Weggers, a Woodland, California, crop dusting flyer.

The complaint, filed in the Yolo County Superior Court, on August 27th, 1945, asks that the flyer be restrained from dusting tomato fields within five miles of the bee hives, because the poisonous dusts drifting from the airplane used by Weggers in dusting the fields, killed so many of Whitcombe's bees.

This is a test case and the Woodland flyer has indicated his intention of fighting it.

Sacramento, Cal.

[We have asked Mr. Shelley to keep us in touch with future developments of this case.—Ed.]

EXCESSIVE WINTER LOSSES REDUCED

By Bro. Frederick

If the bees have to live during the winter months on wild aster honey from low or even swamp lands, and have to be content with the too moist air and foggy condition near Lake Michigan, conditions for good wintering are very unfavorable.

For 20 years I have had a hive on a scale during the active part of the season. During the last 10 days in September and the first week in October we have a fair honey flow from wild asters. In 1944 the scale hive gained 25 lbs. during that time. As we extracted no more than 500 pounds of honey from wild aster, it is clear that our bees (nearly 200 colonies) had at least 4000 lbs. of wild aster honey stored in the lower half of the double brood chambers.

During the first 15 years I took care of our bees, I had to tolerate from 30 to 50% of dead or weak colonies in the spring.

Upper Entrance Helps

Packing of colonies for wnter, either with tar paper or in packing cases was no guarantee for good wintering. During the first ten years I took care of our bees, more very strong colonies were lost during winter than colonies with normal strength. Very strong colonies can not stand much packing here and the size of the entrance can easily be too small. The now favored second opening near the top will remedy this condition. But in packing any colony of bees it is always advisable, at least at such places with similar conditions as given above, to follow the advice of Prof. Lineburg of Lake Forest, Ills., given some 20 years ago. He said that the front of the lower brood chamber should not be packed. By following this advice better results in wintering were obtained. If the front of the lower brood chamber is not packed, it is easier for strong colonies to overcome warm spells during winter months, and the sunshine on the unpacked front may save many a colony too.

Plenty of Good Honey in the Upper Half of Double Brood Chamber.

Feeding every colony 15 to 20 lbs. of sugar syrup early in October gave also better results in wintering, but feeding of several hundred colonies was simply impossible on account of pressure of other work. The cluster of bees will move upward during the winter months. Better results in wintering can be expected if honey in the second brood chamber is of the very best quality. To get this good honey in the second brood chamber, it is necessary to put the queen in the lower brood chamber, below the **queen excluder** early enough so that all brood in the second brood chamber may be nearly hatched at the beginning of the main honey flow. The second brood chamber will then be filled with the very best honey. **A strong colony with plenty of good honey is hard to kill.**

For the past ten years we have put about 100 colonies in a cellar for wintering. About 25 of these colonies have only one standard brood chamber, the rest have also a shallow food or brood chamber. For the last 5 or 6 years, during the latter part of February, more single brood chamber colonies became spotted than colonies with a shallow second brood chamber. Several years ago 3 or 4 colonies in single brood chambers died.

To make the colonies move upward more readily during winter months, several newspapers and also ½ inch thickness of felt are put over the inner cover. It does not take long for the bees to find the warmest place in the hive.

Techny, Illinois.

HIVES KNOCKED OVER

By Carl M. Teasley, P. F. C.

The article and picture by Clarence Tontz on page 221 of the April, 1942, Gleanings remind me of the trials and what-not that I had in 1940 while I was working for Jensen's Apiaries of Macon, Mississippi. One of Mr. Jensen's out-yards is located in a pasture of about 100 acres. I was checking on this particular yard about once every two weeks. At least two of the hives were turned on their sides every time I visited the yard. I rarely noticed a bovine member near to the hives, but found a few tracks of the beasts frequently showing that they did pay the location visits. No thieves ever visited the yard. No loss of queens ever occurred because of these spills.

Charleston, S. C.

SECOND GLANCES

C. M. Isaacson

Aluminum paint has another advantage besides those mentioned by Milton Stricker (page 369). It does not have the tendency to blister or peel during the winter months here in the North—as lead paint does when moisture is absorbed from the inside of the hive. It is more durable, and almost non-chalking, as he says, and many beekeepers are switching to its use, a type of asphalt-aluminum being quite popular.

Rapid temperature changes are needed for heavy nectar secretion by the clover family. This factor has been pretty well recognized, among others not so well understood, such as soil, time of annual rainfall, etc. The article on "Beekeeping in Bermuda" brings this out again, and contains many other interesting items as well (page 371). With almost continuous brood rearing, one can see why annual requeening would be necessary—the fact of little swarming (and consequent "natural" requeening) would also contribute.

House bees aren't free, as Mr. Tontz well puts it in his article on page 374. For that matter, no bees are, in that all require attention and work for results. Yet while those gleaned from house colonies, etc., often mean much and hard work in the obtaining, there is no denying that it is fun—and a certain thrill after they are in a hive. While we know better, still that feeling persists that we have "got something for nothing" and that's irresistible!

Honey is sweeter than sugar, Mrs. Nielsen says— 25%, cup for cup (page 376). But on page 380, in the item reported by H. H. Root, the statement is made that 1.43 pounds of honey must be used to replace one pound of sugar in ice cream—that honey averages only 70% of the sweetness of sugar. The two do not reconcile. Do not most authorities agree that because of the high percentage of levulose in honey, the relative lessening of its sweetening power because of its water content is made up for? My impression has been that the two (sugar and honey) are roughly equal as far as sweetening goes. And in its use in ice cream, would it not tend to produce a product that would melt somewhat more quickly, which would be a disadvantage in keeping?

Requeening without dequeening is an idea long cherished by beekeepers (page 377). Sometimes conditions are such that a method such as described by Colin Campbell works well, and many other variations also have their merits. But the many manipulations he mentions would preclude its use in a large apiary system, where there are many outyards. There, it is well to drum and smoke quite a few of the bees from the body being taken away (take all the brood in this if possible—just leaving enough to raise a new queen on the original stand) and carry it quite a distance off. Swarms will often not issue then and the field bees are all left at work.

Extra queens in nuclei do help to bring "all colonies up to the best" (even though that ideal can never be quite reached). It is surprising—and should be a check to pride—to read of how much of our "modern" beekeeping was practiced by A. I. Root a lifetime ago (page 378). Requeening when necessary, rather than any periodic system is another bit of his wisdom that we are finding more and more true.

The Free Queen System works out better with Caucasian bees and the "large hive—shallow super" equipment, than it does with standard ten frame and Italians. The latter tend to scatter brood too freely in the deep bodies used for supers, making swarm control, honey removal, arranging a compact, **well provisioned** hive for winter all the more difficult. Demareeing also results in better filled supers, unless the flow tapers off very gradually (page 379).

Requeening laying worker colonies can be done with a high percentage of success by a simple method. Shake **all** the bees on the ground some several rods from the hive location. Exchange one frame for a comb of brood and young bees from a queenright colony (or if you have laying queens in nuclei, just exchange for the nucleus frames) and give your queens—in a cage if not laying. The laying workers won't fly back, the other bees will. I have used this many times (p. 381).

Middle River, Minnesota

Asked and Answered

When To Requeen

Question.—I have a hive of bees that were obtained and set to work in June, 1944. The queen was very active all season and raised quite a lot of brood, but there were no queen cells. Will it be necessary, or advisable, to introduce a new queen into this colony this spring, Since the present queen is nearly a year old, I am not certain whether to keep her or to destroy her and introduce a new queen.—R. S. Christenson, Mich.

Answer.—We hardly think it will be necessary for you to introduce a new queen this coming season unless you see signs of the queen now in the hive failing. Quite often a queen does better work during her second year than she does the first year.

Keeping Honey From Granulating

Question.—Each year after I extract the honey and store it in air tight glass containers, it crystalizes. Can you tell me how to keep the honey in liquid form?—Wally Ciepiela, N. Y.

Answer.—Before honey is put into glass, it should be liquefied thoroughly and brought to a temperature of 160 degrees Fahrenheit, and left at that temperature for about half an hour. Before the honey has cooled and after it has settled, it should be put into glass jars and the caps should be put on the jars while the honey is hot. This procedure usually keeps the honey in a liquid form until it is in the hands of customers. The heating also destroys any yeasts that may be present in the honey.

Does The Queen Give Advance Notice of Swarming?

Question.—Does the queen bee give a sign before swarming? I have noticed about every five minutes the queen gives a high G pitch sound. The bees usually swarm a day or two after. It never fails if the weather permits. You can find this out by listening near the hive without opening it.—Peter F. Guimares, Mass.

Answer.—The writer once heard the sound of "zeep-zeep-zeep," long prolonged, just before the emergence of a swarm. As a rule the swarm precedes the queen and she follows immediately thereafter. That the queen may give this sound days in advance has not been reported, and it is our belief that it is not a common occurrence or it would have been discovered before. It is generally held that the bees themselves and not the queen that starts a rumpus, if we may so call it, a minute or two before the swarm actually issues. In any event, the queen follows last. If any of our readers have heard the advance note of the queen several days before the issue of a swarm, we should be inclined to believe it is due to fright or some other phenomenon in the hive.

Swarming or Supersedure Cells

Question.—How can one tell the difference between a swarming queen cell and a supersedure queen cell?—V. O. Wilson, Ark.

Answer.—Swarming cells are usually found on or near the bottom of brood combs, the number of cells depending somewhat on the size of the colony and the season of the year. Sometimes twelve or fifteen cells will be built. Swarming usually occurs when the population of the hive is at the maximum, and is thought to be caused mainly by congested conditions within the hive. Supersedure cells, on the other hand, are likely to be found built somewhere in the center of brood combs, rarely more than from three to five cells in all.

What to Do about Patches of Drone Comb

Question.—I have some frames in the brood chamber of a double story colony that are in bad shape along the lower edge from drone comb. They are unsightly and hard to remove. Could I cut this drone comb out or would it be better to remove the combs entirely and put in full sheets of foundation?—F. D. Simpkins, Ohio.

Answer.—It would seem advisable to remove from your double brood chamber any combs that contain an excessive amount of drone cells and place these in one of the supers above the queen excluder. After the brood emerges from the cells, the bees are likely to use the combs for the storage of surplus honey. At the end of the season you can cut the combs out of the frames and if you care to, you may leave the wires in the frames so that they will be in readiness for installing full sheets of worker foundation at some future time. We assume that you have the four horizontal wires in each standard frame. In any event it pays to have good combs in your brood chamber. Combs that are not perfect may be used in supers for the storage of surplus honey. In most instances, however, the bees will store honey in the worker cells and leave the patches of drone cells until the last. If, however, the honey flow is heavy, the bees will use the drone cells for storing honey.

From North, East, West and South

N. CALIFORNIA, Sept. 5

Conditions: This was written September 5th in Oakland, Alameda County, the largest city in California that can be called a honey producing community. It has been called the center of the eucalyptus producing area. This is hardly fair inasmuch as the eucalyptus district extends along the entire California coast line in an area fifty miles north of Oakland and southward to San Diego, a distance of nearly 600 miles.

The honey flow comes early; extraction is often over in May and there is always a crop. Size of the crop is dependent on the beekeeper—some produce a good crop while others produce none. It is seldom that the use of poisons on vegetable crops in this county cause injury to bees and there is very little disease.

The crop in the bay area according to an estimate made during a meeting of the Alameda County Beekeepers' Association held August 26th, was 80 pounds to the colony. The honey is of good body and of a light amber color. There is little in the hands of producers today. Our migratory producers report a crop of 150 to 300 pounds per colony. These larger results are obtained by securing several crops commencing with eucalyptus, then alfalfa, lima bean, and finally, star thistle. The average beekeeper will report the 1945 crop as a poor one.

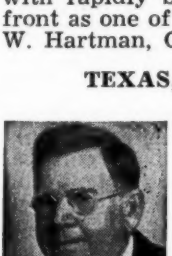
We have a late flow which is now on from garden flowers and eucalyptus which prevents the starvation and feeding so often reported. Some requeening is already reported.

Miscellaneous: On account of the shortage of gasoline, State Association meetings have not been held regularly and meetings held by the County Association have been poorly attended. Now that gasoline is more plentiful we may expect better attendance at all meetings. As an indication of this, plans are already being made for a big winter meeting of the State Association.

Conditions in Central and Northern California which we usually report are rather discouraging for a good crop. The various crops excepting star thistle are at an end. Star thistle, one of the most popular honeys in California is reported spotted—some parts overcrowded, the result being some good crops and in other places, poor to none at all. The flow at this time is near the end; the plants are drying up. The honey crop of 1945 is not as good as was expected at the beginning of the season.

The activities of the American Honey Institute must be credited with rapidly bringing honey to the front as one of the best foods.—Cary W. Hartman, Oakland, Cal.

TEXAS, September 4



Over half a century ago the writer had his first contact with Gleanings a long distance from Texas. At the home of his grandfather, he actually ate up Gleanings, as told by his mother. In one of the bee publications of that day there was a wood cut of the J. M. Valentine house. This is now a famous structure, which is a two-story eight sided board building in which the colonies of bees were kept. The bees emerged through holes in the side walls. This structure was located just a short distance from the home of his grandfather who was also a beekeeper. Many years later the writer became acquainted with the beloved editor of Gleanings at a Chautauqua Course.

In September, 1919, F. B. Paddock, then State Entomologist of Texas, turned over to one of his assistants the writing of "In Texas" for Gleanings. From that time on it has been a pleasure to continue the connections with Gleanings. Through its columns the Chief of the Division of Apiculture, Texas Agricultural Experiment Station has made many friends and regrets that this column must be the last.

The writer wishes to thank E. R. Root, Editor of Gleanings, and all the members of the Gleanings family for the many favors shown him. —H. B. Parks, San Antonio, Tex.

MASSACHUSETTS, August 28

Weather: Heavy frosts destroyed much of the fruit crop in this section of the state, and cold rainy weather followed which prevented bees from securing sufficient nectar to maintain themselves. Heavy feeding was necessary to keep up brood rearing and prevent starvation until June 15. Fine weather followed, and bees that were being fed had stored between 50 and 75 pounds of honey by July 1. The honey flows have continued with only a few short intervals when bees were not gaining weight.

The Crop: At this date colonies occupy two and three full-depth supers, with from three to four shallow supers above, all full of fine quality honey. Considering the fact that all colonies are divided in April for pollination of the fruit crop, honey production might be considered good. I would not wish to operate taller colonies so the two-queen system of producing larger colonies does not interest me. If by leaving the colonies undivided we could produce twice the amount of honey, the apiary would look like some of the pictures we have seen in the magazines. Late goldenrod and wild aster will furnish another 25 to 50 pounds of honey but much of it will be stored in the brood chambers as the late brood emerges.

The Market: There appears to be a ready sale for honey in 5-lb. glass jars. While our honey from the mixed sources runs from the light to dark amber our customers like the flavor.

Condition of Bees: There has been but little supersedure, and brood rearing has been heavy all through the season. The writer has done considerable requeening, reserving only some 25 or 30 of the best old queens with high production records, for queen-rearing in 1946. We have not had to feed any sugar in our queen-rearing operations, and very little sugar will be fed this fall for wintering.

Miscellaneous: My son, Sgt. W. W. Newell was at home on furlough to help me put the apiaries in shape for the fall flows, and do some extracting. He said he couldn't find a poor colony in the lot. Perhaps he was trying to do a little kidding. He was called back to Texas to get his discharge, and will be at home to take off the crop.—R. E. Newell, Holliston, Mass.

SOUTHERN CALIFORNIA, Sept.5

Crop Conditions. — The season is nearing a close. Here and there bees may be getting a little nectar but, generally speaking, the honey season is over. Beginning with our early bloom like the black sage and the orange, we know of no single source that came up to expectations. While the crop is better than that of 1944 still it is not over 50 per cent of normal. Bees are in good condition and most beekeepers who did not move to northern ranges have left colonies heavy with stores, hoping for a crop next year.

Miscellaneous: Buyers have been busy in their efforts to buy honey and wax at ceiling prices. Several apiaries changed owners in early spring at prices around $10.00 for two-story ten-frame colonies. Many colonies were extracted quite close and moved to the cotton, alfalfa, and thistle ranges in the central and northern part of the state after the orange flow. Although they all got some honey we have heard of no one who secured as much as he had hoped to get. The migration of beekeepers from the South to the upstate or northern ranges has exceeded that of any former year in our opinion.

Throughout the mountains of Southern California we have had more rain than in any recent summer. This came in heavy thunder showers bringing as much as six and seven inches in some places. In very few cases has this been of any material benefit to the beekeeper. We have a low bush wild buckwheat that grows on the higher elevations, known as Indian buckwheat, and in years past in a few favored sections it has been known to yield very heavily after these summer showers. This plant is scattered over most of the territory in which these rains occur but in only a very limited area is there enough to help the beekeeper. —L. L. Andrews, Corona, Calif.

OHIO, Sept. 8.

Conditions: Low temperatures in the central part of Ohio and many other portions of the state confined the bees during the major portion of the dandelion flow and again for the greater portion of the yellow sweet clover flow. Sugar sirup feeding was necessary and many beekeepers could not obtain the sugar. No doubt loss of many colonies resulted from this unfortunate circumstance. Many of the colonies that survived were too weak to build up for alsike and white sweet clover flow.

Swarming in May—the maxim for many years—was due to the fact that May was so cold and wet that very few beekeepers were able to get the necessary adjustment made to prevent swarming. This also reduced the strength of many colonies. Swarms of enormous proportions draped the trees and bushes for days in many yards.

August gave us only 1.55 inches of precipitation instead of the normal more than 3 inches. So far in September it has been dry and hot with no rain.

The amount of honey left on the hives as a safety valve is very rapidly disappearing and prospects in this vicinity for a fall flow are not favorable unless we get rain in the very near future. The north and northwestern portions of the state were favored with a heavy rain a few weeks ago. In this territory the bees have been doing some very fine work. If I were to make a prediction of the total crop for Ohio this year I would say that it will not average more than 30 pounds per colony. Some beekeepers will have considerably more while others will have less or perhaps none.

In closing, may I suggest that each beekeeper send a $5.00 check to Mr. Glenn O. Jones, the new secretary-treasurer, at Atlantic, Iowa, and become a member of the Federation of State Beekeepers' Association. It will be a future assurance for beekeepers all over the North American Continent. With your good financial help we will all stand shoulder to shoulder with the American Seed Trade Association, Field Seed Institute of North America, The International Crop Improvement Association, The Agricultural Research Administration, and many others. —W. A. Coulter, Columbus, Ohio.

NEBRASKA, Sept. 8

Crop Conditions: Bees are still storing surplus. During an unbroken two weeks' heat wave in late August and early September, when the thermometer registered from 93 to 103 degrees, the bees have really gone to town, seemingly to make up for the time lost in the spring season. During the spring months the weather was unusually cold and wet. Heavy feeding of sugar syrup was necessary and despite this aid the best colonies were starving in June with an abundance of dandelion and sweet clover bloom all over. Bees could not get out to gather nectar. Our prolonged hot weather without moisture and with much high wind has been hard on corn, much of which was planted a month late, but the bees have surely reaped the golden harvest. Should we be fortunate enough to have a late fall without hard frost an abundance of dark honey will add to the splendid crop which is now on hand. Our main source of fall honey is heartsease, commonly called smartweed, and this plant is blooming profusely in fields and wayside ditches—deep pink, long blooms. Crowding the bees for super room now will force them to fill every available cell in the brood chamber which is very desirable insurance for good wintering. Beekeepers who did not provide sufficient super room have been plagued with excesive swarming this year—and the loss of surplus as well.

Heavy demand for honey is continuing, caused in part by the continued sugar shortage. Many housewives have learned to cook and bake with honey which may easily result in a better market after sugar rationing is a thing of the past.

We are anxiously awaiting the outcome of the effect of the new DDT on bees. An insecticide that can eradicate flies and mosquitoes is indeed a boon but will it also prove to eradicate the beekeepers' workers?—Benj. Nielsen, Aurora, Nebr.

ONTARIO, Sept. 8

Crop Conditions: At this date all beekeepers in Ontario will know what their crop will be, as few if any parts of the Province ever have any gathered after September 1st. Only once have we had surplus produced after that date in at least 60 years. That one year gave us winter stores from a small aster and never before or since that season have we ever had any aster honey.

Recent communications from the Manager of the Ontario Honey Producers' Cooperative and the Provincial Apiarist, say that the crop for Ontario will not be more than 15 or 20% of normal. Many commercial apiarists will not wet the extractor and with sugar for winter feeding cut down to 15 pounds per colony (that amount covers allowance for spring of 1946 also) it looks as though many colonies will starve this coming winter.

What is the cause of this failure? Every beekeeper interviewed has the same story. Bees built up abnormally strong when we had temperatures of over 70 degrees during late March and early April. They used up their stores and were ready for supers late in April. Then we got four weeks of near winter weather in May and the great crop of bees raised a month earlier, used up the stores and the queens stopped laying. Bees were not as strong when clover opened as they were in mid-April. Early stimulation so much talked of lately was taken in hand by Mother Nature and for this year at least, the results were disastrous. Then again, many apiaries including our two best situated in a sweet clover district, lost most of their field bees just before clover started to bloom. Literally thousands of bees were crawling over the ground and while we did not send any bees away for microscopical examination, we suspect the trouble was Nosema.

Demand for honey has been very keen and many have been disappointed in not getting their usual supply.

It would not do to end this gloomy report without looking for a bit of sunshine for next season, the **good season** that beekeepers are always looking for! Clover seems to be plentiful wherever we have been lately and one thing is absolutely sure—there will be no carry-over of this year's crop to glut the market for the crop of 1946.—J. L. Byer, Markham, Ontario.

MINNESOTA, Sept. 10

Weather: The importance of favorable weather for beekeeping was clearly shown this year. A March "warm spell" was followed by a long period of cool rainy weather, "the worst spring in twenty years", when bee work was difficult and bees were largely confined to their hives. All colonies suffered, even those with plenty of honey, for very little fresh pollen was brought in. As food ran low brood rearing declined, and many colonies knew what it was to eat their brood to keep alive.

Pasturage—Honey: Because of the cool rainy spring, fruit bloom and clovers were about two weeks late, and rain and cold weather often interrupted the honey flow. But, the flora was present whenever warm sunny days came. July was a fair surplus honey month, and weak colonies built up to gathering strength. With warm August days and early September, the honey flow remained on. As a result what looked like a poor honey year finally resulted in a good honey crop for eastern and southern Minnesota, but not so good for much of northern and western Minnesota, generally speaking. A Red River Valley beekeeper reports a 60-lb. crop while for southeastern Minnesota come 120-140 lb. reports. For many apiaries the Dutch clover made up in part for the lack of sweet clover.

Bees: Colonies so weak June 15th they could not swarm, finally built up and surprised many beekeepers by unseasonably hanging out on a limb. Usually August swarms are not worth much to us, but this year they were. A few beekeepers fed pollen substitutes and benefits showed up well. Nosema is reported in places. Bees are in good fall condition at this writing.

Honey Plants: Although some areas are too dry, the general condition of honey plants is excellent. Sweet clover bloomed surprisingly well and the young plants look fine. —Bruce L. Morehouse, Montivedeo, Minnesota.

Editorials

Scarcity of sugar makes it essential for beekeepers to leave their bees an ample supply of honey this fall, for winter and early spring stores.

Don't feed dry sugar late in the fall to supply a deficiency of honey in a wintered over colony, and expect the bees to take it up before cold weather comes on. By all means, convert the sugar into syrup, two parts granulated sugar to one part water, and feed in the regular way.

Research in Seed Production During the recent meeting of the National Committee for Farm Production Supplies the need for increased appropriation which would enable Agriculture to carry on Research in seed production was called to the Committee's attention by William Heckendorn, Secretary. He also emphasized the importance of pollinating insects in a balanced seed production program.

It is gratifying to note the recognition that is being given to pollinating insects, particularly the honeybee, in recent years. Much work lies ahead for investigation in this fertile field.

Upper Entrance Advantageous for Two Story Wintering There has been much discussion on the upper hive entrance, so-called, in connection with wintering bees in the North. There is some confusion as to what the term means. Some refer to it as a middle entrance while others call it a top entrance. Obviously, the two terms are not synonymous, even though both are, in a sense, upper entrances. The top entrance is, or should be, at the very top of the hive while the middle entrance, as the term signifies, should be located somewhere between the bottom and top of the hive. We like the middle front entrance consisting of a 7/8" auger hole bored just below the hand hold in the upper brood chamber.

When bees were wintered in single story brood chambers with only the bottom entrance it was comparatively easy for bees to find the entrance, provided it was not clogged with dead bees or ice. Now that a large percentage of beekeepers use the double brood chamber (and some winter in **three** stories) an upper entrance seems almost essential, because the bees in the winter cluster can, on a suitable flight day in winter, more easily find and use an upper entrance than they can a bottom entrance. Furthermore, the upper entrance helps to expel excess moisture that may accumulate in the upper portion of the brood chamber and is also a safety valve, in that the bees are never smothered in case the restricted bottom entrance becomes filled with dead bees or ice.

A Simple Plan to Let Moisture Escape We have had some reports from beekeepers who do not pack their colonies, telling how they get rid of excess moisture by placing two and sometimes four small nails between the inner cover and the brood nest proper. The gap so made is not wide enough to let bees pass through. Sometimes super covers are shoved back without any nails, just leaving a gap which the bees cannot pass, for the moisture to escape. This little scheme of ventilation has been mentioned many times but little attention has been paid to it.

Going back to Langstroth, on page 418 of this issue, he mentions putting tacks between the honey board (as he called it) and the hive proper to allow the moisture to escape. Think of Langstroth talking about that 90 years ago, and now we discover it as something new under the sun!

Of course, it is understood that upward ventilation will not bring a colony through the winter successfully unless other factors, very important, are present—plenty of sealed honey, a winter nest made by the bees, wind break, plenty of bees, preferably strong enough to occupy two stories, and packing around the hive **when and where needed.**

Practically all of the beekeepers who use this method of lifting the super cover slightly, do not pack. To be safe, we advise not trying this out on too large a scale. Use a method that has given good results whether you pack or not.

New Comb Honey. However foolish it may be to claim that newly extracted honey is better than that which is several months old, it cannot be denied that new comb honey has an appeal that is irresistible.

On the table in an American home, even one where extracted honey appears regularly, see what happens when a section of new comb honey is served. Not only the children but all the adults as well, eat a generous portion. No wonder the majority of women, when asked about honey, say they prefer it in the comb. This consumer demand, especially now that the war is over, must not be ignored. The further fact that a grocer can sell more honey in glass or tin if he has comb honey on display should also not be forgotten.

Many a shrewd producer will do well to plan to produce some comb honey, at least, in 1946. Comb honey is never imitated, is always in a class by itself; it stands head and shoulders above all other sweets.

DDT—No Cause For Alarm Yet In our last issue we reported that DDT had been released for civilian use, but a late circular letter from the U. S. Dept. of Agriculture, Bureau of Entomology, says: "On July 26 WPB announced that in August small quantities of DDT, in excess of military needs, would be released without restrictions." It was emphasized that the quantities released during August would be small and inadequate to meet the desired civilian and agricultural use.

It is evident that our dear Uncle Sam realizes the danger of this product and is watching its effects in various parts of the country with due regard to the lives of useful insects, including bees. In our last issue we reported only one case where there was any destruction of bees. This was in Florida.

Some reports are coming in and all of them testify that the bees have not been injured or destroyed in this experimental work that has been going on. There are several letters like the following, from Woodrow Whidden, Titusville, Florida. He writes:

"Please inform your readers to stop all worry in regard to DDT killing bees. I have 64 hives of bees at Cocoa Beach, Fla., near the Banana River Naval Air Station. These bees were sprayed with enough DDT to kill plenty of them if it was harmful. They are in fine shape for this season of the year, but harmful mosquitoes have been destroyed."

Also another from the same state, from W. H. Burrows, Kissimmee, referring to the last three lines first column, page 404, last issue, wires:

"To correct apparent misunderstanding, spraying cattle for hornfly does not kill bees.

Robert S. Filmore, Associate Entomologist, New Jersey, writes:

"At the present time we have just concluded a test where colonies of bees were placed in an area which was treated with DDT for mosquito control. Observations show that the bees were not injured. The rate of applications of DDT in this test was rather low, only 1/25 lb. applied per acre."

It is evident that where bees were not killed by the DDT the solutions were not strong enough. If it is possible to regulate the strength of the sprays to kill one and not the other, it is great news.

We shall be glad to have our readers continue to report any and all cases of bees destroyed either by DDT, arsenicals, or any other cause.

Two Important Factors for Successful Wintering Charles A. Reese, of Ohio, oldest bee inspector (in point of service) in the United States, and who has probably seen more colonies of bees in the spring than any other man, makes some very important suggestions. One is—don't rearrange the combs or otherwise disturb the winter nest which bees have prepared. He writes:

"It is a very poor policy to do any rearranging of brood nests or combs within the colony after the first of September, and I still think that bees, if permitted to show their natural instincts, can do more for themselves than any particular aid that we might apply, in what we believe as a corrective measure for some poor practices followed, or unorthodox procedures, during the production season. Give the bees a chance and they will take care of themselves."

He made that very emphatic in his talks here at Medina and elsewhere. Again he makes another suggestion. When you pack, pack in honey. By that he means be sure to have solid slabs of honey on each side of the brood nest, upper and lower story, and if possible, within reach of a good big cluster of bees.

On Langstroth, we also quote from Mr. Reese's letter:

"In my estimation, Langstroth solved the wintering problem years and years ago, but it is still being debated and everyone is following some other suggestion."

See Eighty Years Among the Bees, page 418.

Talks to Beekeepers

By M. J. Deyell

No Two Seasons Exactly Alike.—If all bee seasons were alike beekeeping might become monotonous. The variety adds zest to the game.

As a matter of fact, we never know what is just around the corner and consequently we must be ready to meet any emergency that arises. Many unusual things happened this past season to keep us right on our toes. All of you know what happened in your respective localities. Here in the vicinity of Medina we had a very backward, cold, wet spring and early summer. Bees were on the verge of starvation, even when they should have been storing surplus from clovers. During late August, following some copious rains, honey began to come in from late clovers and other sources. At present (this is September 13) bees are working on goldenrod, and the scale hive has been gaining one or two pounds a day.

Preparations for Winter.—Bees know better than their owners how to solve wintering problems. Generally speaking, if colonies in double brood chamber hives well filled during a normal season, are permitted to keep the honey they have, stored in the brood chambers, they will, in most instances, go through the winter successfully.

Perhaps not enough is known how a colony goes through the winter in the North. A number of beekeepers seem to think that the bees simply huddle up together on the combs in order to keep warm, and eat enough honey during the winter to keep them alive. That is true, of course, but there is a method or system in their huddling together that is not well understood. Even some of the experts may not agree on what actually takes place within the cluster of bees.

Incidentally, bees may have more sense than humans in meeting the problem of keeping warm during the winter months, which calls to my mind a little verse I concocted recently. It runs like this:

Perhaps the time may come, who knows,
When we can fool the winter snows
By rolling up into a ball
When come the chilly winds of fall.
Then sleep and dream the winter through
Instead of freezing as we do.

A Word about the Winter Cluster. If we have not given at least some consideration to the manner in which bees cluster during the winter, we should do so in order to better understand what we can do to help them carry out their winter program.

As I interpret the literature on this subject, a colony of bees starts to form a winter cluster when the temperature surrounding the bees gets down to approximately 57° F. The lower the temperature goes, the tighter the bees cluster. When the weather gets real cold, the bees on the outside of the cluster form a rim or periphery about two or three inches in thickness with their heads pointing to the center of the cluster, and their bodies packed tightly together, this to retain some of the heat generated by muscular activity by the bees on the inside of the cluster, where bees are clustered loosely. It is said that the temperature in the center of the cluster does not go below 57 degrees Fahrenheit at any time during the winter (but may go considerably lower), even though the temperature outside of the cluster and outside of the hive should go considerably below zero.

Some think that bees on the shell of the cluster exchange places with the bees near the middle of the cluster, periodically during the winter, presumably to bring about a fair distribution of labor. Others do not think that this changing occurs.

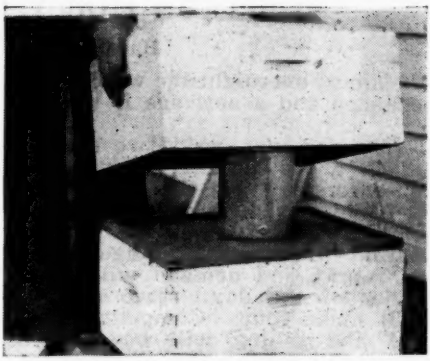
It should be said that the cluster, which, as a rule, extends over from four to seven or eight combs, depending on the size of the colony, covers a portion of honey, also some empty cells. As the honey is slowly consumed, the cluster moves up during the winter. As a rule, the winter cluster is formed near the front of the hive and it will move up slowly, then, if it meets the top bars of the frame, it will move back. If all the honey in the combs occupied by the cluster is consumed before spring, and the weather is too cold for the bees to break their cluster and move to other parts of the hive to feed on remnants of honey that may be left, the bees will starve. Right here, it will be realized how important it is to have full combs of **good honey** directly above the cluster of bees during the winter.

What I Actually Saw. During December, 1940, I was out hunting rabbits near one of our apiaries. The bees in this yard were well protected against the prevailing winds and most of the hives were not packed or insulated, so I decided to lift up one end of an upper brood chamber (sometimes called the food chamber). As I did, an interesting sight met my eyes. When I lifted up one end of the food chamber, I split the cluster of bees into what appeared to be two equal parts. The entire cluster had been spherical in shape and occupied seven spaces between combs. The center of the cluster, immediately after I lifted the end of the brood chamber, consisted of bees that were loosely clustered, in fact, they were moving about, while the outside rim or periphery of the cluster, which, by the way, was about 2½ inches in thickness, consisted of bees packed tightly together and were practically motionless. I opened two other hives and found identically the same condition, and so, if you want to see an interesting phenomenon, split a winter cluster of bees in two on a cold day and observe quickly and carefully the construction of the cluster. I do not recommend this practice generally except for experimental purposes.

Winter Requirements. There are at least three requirements, namely, **very populous colonies,** an **adequate amount of food** for each colony, and and a **reasonable amount of protection** against the elements.

Populous Colonies. I have found, from past experience, that it is possible to winter colonies below par in strength. Colonies that are weak in the fall are likely to be much weaker in the spring and require extra labor and expense. So why fool with weak colonies? One honest-to-goodness strong colony may be worth more than a half-dozen weak or mediocre colonies, and I believe that one very populous colony consumes less food proportionately during the winter than two or more weak colonies.

Ample Food. Too much emphasis cannot be put on this requirement. Some beekeepers try to winter colonies on as little honey as possible. This is poor practice. If a colony has an overabundance of honey, it is never wasted. It is like money in the bank at compound interest.



A handy feeder—a friction top pail having a dozen small nail holes in the cover, filled with thick warm syrup, inverted over the hole in the inner cover. Empty super is put on, then outer cover on top.

We have found that a two-story colony in standard 10-frame equipment should have a gross weight of at least 130 pounds in the fall. The upper chamber should be practically full, with additional honey in the lower chamber. The winter cluster is then surrounded with honey and is not likely to starve.

Protection. During the last decade, around Medina, we have not packed our colonies in single walled hives. If we were further north we might pack. We aim to have the apiaries in locations well protected from the prevailing winter winds.

I found from carefully conducted experiments, that packing does save stores, and doubtless saves bee energy. I have found, however, that unpacked colonies have more brood in the spring than packed colonies. (See page 331, of June '42 Gleanings, for details).

I am not against packing, provided packing material can be kept dry. If you pack bees and are having success, continue doing so. Use whatever method of winter protection seems to work best for your locality.

Sugar for Bees. Should you need sugar for bees, application should be made on OPA Form R-315, at your local Sugar Rationing Board. You are entitled to 10 pounds of granulated sugar for each hive of bees, and 15 additional pounds, if an extra amount is really needed.

Sugar syrup should be made of two parts of granulated sugar to one part of water, and fed in a bee feeder, or as illustrated.

American Honey Institute News Notes

Harriett M. Grace, Director

Almost overnight the whole world changed and a new age is upon us.

* * * *

The post-war period we heard so much about is here. Some trade observers say that the seller's market may vanish as suddenly as war came upon us or as the post-war period descended. The age-old law of supply and demand will be the order of the day. Two and two will make four. Competitive buying and selling will be with us. What will the future hold for honey? During the first World War people used honey and liked it for its deliciousness and food value. After the war many went back to their previous habits partly because honey was not available the year around on the store shelves.

Today things are different. From the letters that come to the office from every section of the country we hear that honey is now recognized for its great value and will be in continued demand. The honey supply in the cupboard will never be allowed to run out. Let us keep honey available to the homemaker the year around.

* * * *

National Honey Week will be celebrated the last week in October. Two leaflets will be available for you to distribute. The price on the leaflets is sixty cents per hundred or $1.00 for 200 leaflets (prepaid). Sample copies will be mailed to you upon request.

* * * *

A small pocket calendar for 1946 is now available. The two national honey weeks are designated. The outside cover has the caption, "Start the Day—the Sweet Way—with Honey." Inside the cover—the calendar. On the back cover—

Honey for Health,
Honey for Joy,
Honey for Work and Play;
Honey, a Sweet,
Honey, a Food,
Honey Every Day.

Space on the back cover is left for imprinting. If you desire to have a number of these imprinted with your name and address, may we hear from you soon? The price will be fifty cents per hundred. The cover will be varnished.

The new Honey-Cereal leaflet is now ready. You will want to distribute a number of these. Cereals call for plenty of honey.

A Sweet Combination—Honey and Cereals.

* * * *

"An Eye to Business"—Beekeepers are ordering the Institute's leaflets and books to distribute. Orders ranging from one dollar to more than one hundred dollars are received. Much more than $1,000 worth of literature was purchased by beekeepers last month.

Honey displays should be kept at eye level.

How about "Honey" on the shopping bags!

* * * *

60,000 copies of **"Old Favorite Honey Recipes"** were printed February first. Another printing of 60,000 was ordered on August first. More than one million leaflets on honey will be printed in 1945.

* * * *

National Biscuit Company of New York has announced its sponsorship of nationwide newscasts over 155 stations beginning August 27. Running for five weeks, the program will advertise "Honey Maid Grahams."

Dr. "Alec" Munro, Fargo, No. Dak., and Bob Willson of The John G. Paton Co., taken somewhere in Minnesota

Just News

The Minnesota Beekeepers' Association will hold its annual meeting this fall in conjunction with the Minnesota State Horticultural Society. Meetings will be at the Curtis Hotel, Minneapolis, and the show and exhibits at the Northwestern Bank. Guest speaker will be Mr. H. J. Rahmlow, secretary of the Wisconsin Beekeepers' Association. Mr. Rahmlow's talks will be accented by colored movies made in cooperation with the Central States Bee Laboratory, Madison, with Dr. Farrar as "leading man."—Chas. S. Hofmann, Sec.

We regret to inform our readers that **Sgt. Sam Mills,** R. A. F., Southport, Queensland, Australia, who paid us a visit in May, 1943, and who had been reported missing, has now been declared dead. He had 200 colonies of bees.

It seems probable that Valdosta, Georgia, may be the meeting place for the **Southern Federation of Beekeepers' Associations** some time in January.

A beekeeper from the Netherlands, in a recent letter, tells how he kept the Germans from getting his radio. He put it in an empty bee hive out doors and once or twice a week he would go out and listen to the B. B. C. for latest news.

Professor Richie of Iowa State College in an excellent paper delivered at the **Pollination and Bee Pasture Conference** held in Atlantic, Iowa, July 11 and 12, mentioned the following fruits and vegetables that require the honeybees for pollination: Almond, apple, apricot, asparagus, avacado, blackberry, blueberry, broccoli, brussels sprouts, cabbage, cantaloupe, carrot, cauliflower, cherry, collards, cranberry, cucumber, gooseberry, grape, kale, kohlrabi, onion, peach, pear, pepper, persimmon, plum, pumpkin, radish, rape, rutabago, squash, strawberry, turnip, and watermelon.

Our old friend, Harry Lathrop, now 90 years old, a railroader and a beekeeper for over 60 years, retired for a time, has now come back to his old friends, the bees and the railroad in his old home town, Bridgeport, Wisconsin. His letter would indicate he has real old-fashioned "bee fever", in spite of his years. May you round out your century, Harry!

The Bronx County Beekeepers' Association will meet on October 14 at 2:30 at the home and apiary of Mr. Lloyd Jones, 1727 Undercliff Ave., Bronx. A demonstration will be given of winter covering of hives, and examination of the hives to see condition and supply of winter stores.—Harry Newman, Sec.

We have just received word that **Morley Pettit,** formerly of Georgetown, Ontario, of late at Tifton, Ga., passed away. More will appear later as Mr. Pettit was one of the outstanding leaders in our industry.

At the last meeting of the **Worcester County (Massachusetts) Beekeepers' Association** the following officers were elected for the year: President, Henry B. Poole; Vice President, Peter Babbitt; Treasurer, Wilfred Taylor; Secretary, Richard C. Potter.

Bees Important in the Seed Production of Radishes. Some work has been done by J. B. Cramer, of Michigan State College, in showing how bees are important in increasing the production of seeds from radishes. He not only shows that bees are important pollinators, but admits that when there are large fields of sweet clover or other honey-bearing plants nearby, the bees will go to those plants that furnish the highest sugar content, and neglect to a certain extent the pollination of the blossoms of radishes. This is naturally expected because bees will visit those plants that carry the highest sugar content in the nectar. For further particulars regarding this work, see page 413 in the Quarterly Bulletin published by the Michigan State College for May, 1945, at East Lansing, Michigan.

OUR COVER PICTURE

A well-protected Root Company apiary a few miles from Medina.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufactures of Beekeepers' Supplies, Onsted, Michigan.

CHOICE MICHIGAN CLOVER HONEY in glass. Labeled or unlabeled. One pound, $5.75 per case; 1½ pounds, $4.18; three pounds, $7.81. You will be pleased. WILDWOOD HONEY FARM, Tecumseh, Michigan.

FOR SALE—No. 1 Buckwheat comb honey packed in eight case carriers only. Also buckwheat extracted in new cans. Chas. B. Hatton, Jefferson, R. 2, Ohio.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fairfield Honey Company, Millersport, Ohio.

WANTED—All types clover and fall honey, 1945 crop. Cloverdale Apiaries, Fredonia, N. Y.

WANTED—White and amber honey, any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

HONEY & BEESWAX. Highest prices paid. Mail samples. Advise quantity. BRYANT & COOKINHAM, LOS ANGELES, CALIF.

WANTED — Extracted honey, any amount. We pay cash. Lose Bros., 206 E. Jefferson, Louisville 2, Ky.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60 lb. cans furnished, if desired. W. R. Moomaw. Stone Creek, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

CLOVER HONEY WANTED—Top prices for extracted, section and shallow frame comb. Any quantity. State whether you can deliver. KEDASH BROTHERS, Chillicothe, Ohio.

HONEY WANTED—Top prices paid. Write immediately. We also have good used 60-lb. honey cans for sale. J. Wolosevich. 6315 So. Damen Ave., Chicago, Ill.

HONEY WANTED—All grades and varieties. Highest Cash Prices Paid. Mail Samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Cal.

CLOVER HONEY WANTED—Large or small lots. Would like to establish permanent connections with several good producers. Ellsworth A. Meineke, Rt. 1, Arlington Heights, Ills.

HONEY WANTED—All Grades. Carloads or less. Also Beeswax. Pay Top Prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

Mr. BEEKEEPER: The ALEXANDER CO. of Toledo, Ohio, packers of the "Mayflower" brand fancy table honey wish to announce a larger postwar outlet for the product in the construction of their new building at the same location, 819 Reynolds Road on Route 20, Toledo, Ohio.

Our new building will incorporate the latest ideas in scientific and mechanical improvements for the processing, filtering, and packaging of honey, with a capacity of 10,000 lbs. every ten hours.

For years we have been a large packer of honey and now our production will increase many fold.

Mr. Beekeeper, you can have a part in the growth of this business, which some day will help you dispose of crops of honey not sought after as they are today. At that time we will help you, but now we need your help. We need honey—2,000,000 pounds of it—to keep our plant in operation, to fill our contracts. So, Mr. Beekeeper, sell your honey to the ALEXANDER COMPANY of Toledo, Ohio, a reputable firm of long standing—a firm with a known label brand and a permament demand for its product.

Honey is not a sideline with us. It is our only line. We pack only your product, Mr. Beekeeper. We have no other lines to compete with honey. We pack honey only, and have honey only to advertise and sell. Our existence depends upon your production.

If you are near Toledo or can get gas for the trip, we are on Route 20 near Dorr St., Toledo, Ohio. We would like to show you our new plant.

REMEMBER, Mr. Beekeeper, our firm pays cash—does not ask you for time, and in all except distant cases, our truck will back right up to your door. So, don't sell your crop until you look at our bid. Write today for our information card and get the most possible for your honey crop. THE ALEXANDER COMPANY, 819 Reynolds Road, Toledo, Ohio.

WANTED—All grades honey, carloads or less. We pay ceiling prices in cash. Call for it or arrange shipment. Sell your honey to us and we will stick by you always. The Honeymoon Products Co., 39 East Henry St., River Rouge 18, Michigan.

WANT TO BUY—clean white clover or light amber honey, 1945 crop, for spot cash, for delivery in late summer or fall. If you wish to deal with a commercial beekeeper of 40 years' experience, write me what you have and price you want. Roscoe F. Wixson, Dundee, N. Y.

HONEY WANTED—Have buyers for all grades and varieties packed in 60-lb. tins or barrels. Mail samples and state quantity. FOREIGN COMMODITIES CORPORATION, 100 Hudson Street, New York City.

FOR SALE

WRITE FOR LOW CASH PRICE glass jars. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, New York.

QUEENBEE PAINTING outfits, $1.00 colony records, 10-15c postpaid. Southwick Apiaries, Waban, Massachusetts.

INSTANT SEVEN AND NINE FRAME SPACERS. Fast — accurate — indispensable. Fat combs — easy uncapping. Set does all supers, $1.50 postpaid. SPECIFY SIZE. George Leys, 48 Drake Ave., New Rochelle, New York.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

WRITE FOR CATALOG Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries. Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

Dry skim milk, 35 cents a pound; 5 lbs., $1.25; Brewer's yeast, 40 cents a pound; 5 lbs., $1.50; Soy flour expeller. 10 lbs., $1.40. Write for prices in larger units. All prices F.O.B. M. Y. S. Company, Bainbridge, N. Y.

BEEKEEPER'S HOIST, $25.00, frt. prepaid in States. Turner Mfg. Co., Corning, Iowa.

FOR SALE—300 10-frame comb honey supers. No disease. Also will rent 300 or 400 of my colonies of bees. C. McReynolds, Clearbrook, Minn.

FOR SALE—50 standard 10-frame hives, empty, no frames, with telepscope metal covers, prewar type. Clean and painted, $2.50 each. A. E. Crandall, Berlin, Conn.

FOR SALE—Root foundation mill, 12-inch rolls in perfect condition. Write E. R. Gooch, Farmersville, Texas.

FOR SALE—Bee outfit in Southern Idaho. All in excellent condition. No disease. R. I. Robinson, Gooding, Idaho.

SEEDS

BLUE VINE SEED PODS—25 pods mailed to any address for $1.00. See article in August, 1945, Gleanings. S. H. Burton. Washington, Ind.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

WANTED--Extracted Honey All Kinds

One can or a carload—what have you? Mail your offerings and samples to us. Prompt action—Cash on delivery.

JEWETT & SHERMAN COMPANY

Lisbon Rd. & Evins Ave., Cleveland 4, O.
1204 W. 12th St., Kansas City 7, Mo.

MICHIGAN CLOVER HONEY WANTED!

Buyer of MICHIGAN'S fine Clover Honey Michigan producers write me when you have some of this fine Michigan Clover honey ready for market.

Can use your entire crop. Don't forget, and write.

TOWNSEND SALES COMPANY

E. D. TOWNSEND
NORTHSTAR, MICHIGAN

CARNIOLANS

CAUCASIANS

Both races very gentle prolific, good winterers, wonderful workers. We can still supply a few queens of these excellent races this month. Prices: Untested queens, $1.00 each. By Air Mail 6c extra per queen.

ALBERT G. HANN

Glen Gardner, New Jersey

NOTICE!

Sold out for the season on bees and queens, thanks for your order and cooperation.

BOLLING BEE COMPANY

Bolling, Ala.

HOLLOPETER'S

HARD WORKING ITALIANS

Queens from this honey gathering stock now at their best during aster flow. Prompt service on queens reared by J. B. Hollopeter, commercial queen-breeder from 1911. Untested queens, 1-9, $1.00; 10-24, 95c; 25-49, $90c; 50-99, 85c. Young tested queens, $2.00 each.

White Pine Bee Farms

Lock Box 80 Rockton, Pa.

YORK'S

Package Bees and Queens

Quality Bred Italians

Booking orders now for 1946, same terms and subject to later revised prices for coming season. Do not delay, book now and be safe.

Yours for quality, ask any of our customers.

York Bee Company

Jesup, Georgia, U. S. A.

(The Universal Apiaries)

Italian Bees and Queens!

We are booking orders for Spring, 1946. Only 20% with order, balance ten (10) days before shipping date. Prices as follows:

2-lb. package with queen $3.50
3-lb. package with queen 4.50
4-lb. package with queen 5.50

The Star Bee Farm

HESSMER, LA.

THRIFTY QUEENS!

WE CAN MAKE PROMPT SHIPMENT!

1 to 24, 90c each; 25 to 99, 80c each; 100 up, 75c each.

THRIFTY BEES are guaranteed to please.

W. J. FOREHAND & SONS

FORT DEPOSIT, ALABAMA

Breeders Since 1892

WE ARE NOW BOOKING ORDERS FOR SPRING, 1946!

Only 20% down, balance 10 days before shipment.

2-lb. package with queen $3.50
3-lb. package with queen 4.50
4-lb. package with queen 5.50

Dixie Bee Farm

Normand Bros., Prop.

HESSMER, LA.

BEES AND QUEENS FOR SALE

GLEANINGS cannot guarantee that all bees advertised for sale in our classified columns are free from bee disease. We use all possible care in accepting advertisements but we cannot be held responsible in case disease appears among bees sold. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, carefully raised, $1.00 each. D. W. Howell, Shellman, Georgia.

PACKAGE BEES, QUEENS — Italian. Circular free. Crenshaw County Apiaries, Rutledge, Alabama.

IMPROVED ITALIAN QUEENS, $1.00 from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Jr., Caldwell, Texas.

GOOD QUEENS FOR SUMMER AND FALL REQUEENING. Gentle three-banded Italian stock that has made outstanding records for honey production in areas where large crops are made. We now have the experienced help necessary to give you good queens and prompt service. Select young laying queens, $1.10 each; 25 to 99, $1.00 each; 100 or more, 90c each. Postpaid. H. C. Short, Fitzpatrick Ala.

PACKAGE BEES with young laying Caucasian Queens for spring delivery. Booking orders now. Miller and Evans, Three Rivers, Texas, Rt. 1.

FOR SALE—Approximately 150 colonies in M. D. hives with extracting supers. Inspection certificate furnished. About 50% 1945 Hollopeter queens. Howard H. Myers, Ransomville, N. Y.

FOR SALE—About 200 colonies of bees, each is three full depth story, ten frame size hive, with nine frames in each story. No disease, plenty winter stores. In four yards. Willing to sell one or more yards. I am not physically able to do the work is the reason for selling. W. D. Achord, Findlay, Ohio.

ITALIAN QUEENS—Prompt service on finest queens reared during aster flow. Untested, $1.00 each; 10-24, 95c each. Tested, $2.00. White Pine Bee Farms, Rockton, Pa.

BOOKING ORDERS—Caucasian package bees with queens. April and May, 1946, delivery. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE—50 10-frame hives of Italian bees, $10.00 each. Free from disease. D. L. Woodward, Clarksville, N. Y.

THREE BANDED ITALIAN bees and queens for 1946. Booking orders now. Alamance Bee Co., Geo. E. Curtis, Mgr., Graham, N. C.

WANTED TO BUY

WANTED—Approximately 100 clean colonies with desirable uncontested package location. Ed. Trimble, Warroad, Minn.

WANTED—Jumbo hive bodies, frames and foundation. Oakley Whitney, Orange, Mass.

WANTED TO BUY or lease bees. Clarence Tontz, 1503¾ 12th Avenue, Los Angeles, California.

POSITION WANTED

EXPERIENCED Beeman wants job in large apiary preferred, or would take job on farm. Arthur Edalgo, Pinehurst, Ga.

Man 45 interested in learning bee business; have some finances, what do you have to offer. C. G. Reichart, 5 Troy Ave., Bell Mawr, N. J.

HELP WANTED

WANTED FOR HIRE—Two young men, returning veterans preferred, to work with trucks and bees in Florida, Central Michigan, and Northern Michigan, with partnerships or a cut in the business in view after a few month's experience if mutually satisfied. Penn.-Michigan Apiaries, 500 S. Almer St., Caro, Michigan.

WANTED—An experienced beekeeper and one willing to learn. Steady employment. Begin at once. The Hubbard Apiaries, Onsted, Michigan.

WANTED—Strong, capable helper for work in 23 apiaries. Opportunity for permanent job. Ray C. Wilcox, Odessa, N. Y.

MISCELLANEOUS WANTED

WANTED—Four thousand cans of amber honey F. O. B. anywhere in the United States. Send sample and price. Also four bee men who are capable of managing apiaries for honey production, queen rearing, package bees, by water and on land, in the North and the South. Those who are interested in permanent position, please reply. Hyland Apiaries, West Elkton, Ohio.

WANTED TO BUY—Comb or extracted honey any quantity. For sale 500 used 60 lb. cans; honey pump, other equipment; make offer. Poland's, Jefferson, Ohio.

SONG POEMS wanted to be set to music. Send poem for immediate consideration. FIVE STAR MUSIC MASTERS, 497 Beacon Bldg., Boston, Mass.

SUPPLIES

SAVE ON HONEY CONTAINERS IN MINNEAPOLIS. Pre-war quality tin and glass honey containers at pre-war prices. Friction top pails are back. Send for price list. Prompt shipments made from large stock of Lewis-Dadant Bee Supplies. Send list of needed supplies for quotation. TOP PRICES PAID FOR HONEY AND BEESWAX IN CASH OR TRADE. HONEY SALES COMPANY, 1806-08 No. Washington Ave., Minneapolis 11, Minnesota.

MISCELLANEOUS

DISCHARGED SERVICEMEN — If you are a Veteran of World War II, and desire information on beekeeping as an occupation, mail your questions to Veterans Rehabilitation Committee, National Federation of State Beekeepers' Associations, Rt. 5, Box 181, Lansing, Mich.

EARTHWORM CULTURE—Send postcard for valuable FREE bulletin, with review on "Intensive Propagation and Use of Earthworms in Soil-building." Thos. J. Barrett, Earthmaster Farms, Box 488-G, Roscoe, Calif.

QUEENS! QUEENS!

It's Not Too Late!

To requeen your old colonies for winter with good young queens, which will assure better wintering—which will assure better colonies next spring—better crops.

Good queens, prompt service our specialty!

We are now booking orders for packages for 1946 delivery, subject to prices later.

Let us hear from you.

Queens	1-24	25-49	50-100
	$1.25	$1.20	$1.15

15% from above prices balance of season.

Tanquary Honey Farms, Inc.

Lena, South Carolina

We will book your orders for 1946 at prices in line with others in my section, and guarantee you will be pleased. Write for prices and other details.

A. M. PEACH

Baldwyn, Miss.

NORTHERN BRED LEATHER COLORED ITALIAN QUEENS

From Stock Bred for Resistance.
(Our own strain)

$1.00 ea.; 25 or more, 90 cents ea.

DIEMER BEE COMANY

Rt. 2, Box 7 **Liberty, Mo.**

Due to unfavorable conditions, we are closing the season and there will be no more queens available. Now booking orders for 1946.

B. J. Bordelon Apiaries

Moreauville, Louisiana

HONEY

Wanted

A Can or a Carload

Top Prices Paid

Will furnish 60-lb. cans if desired

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

PERIODICALS

TRADE MAGAZINES. Business. Vocational. Diversion. Current single copies. Over 200 fields Free price list. Commercial Engraving Publishing Co., 34M North Ritter, Indianapolis 1, Indiana.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s, 6d., International Money Order, Apply Editor, Indian Bee Journal, Ramgarh, Dist. Nain Tal, U. P. India.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine tells how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.75. Wallingford Building, Winnepeg, Canada.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxston, Royston, Herts, England.

Bright Three-Banded Italian Queens

The kind that every beekeeper is proud to get. Gentle, good honey producers. Price balance of season: 1 to 24, $1.10; 25 to 99, $1.00; 100 up, 90c.

Taylor Apiaries, Luverne, Ala.

BEEKEEPERS MAGAZINE

Serving the National Federation.

Subscribe now at $1.00 per year. Copy current issue 10c. 75c a year through your Association Secretary.

Rt. 5, Box 181 Lansing, Mich.

READ the South African Bee Journal to be conversant with conditions from far afield, Subscription 5/- per year. For further particulars, write to the Hon. Treasurer, 14 Riebeck St., Worcester, C. P., South Africa.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription-$1.50. Hotel Cactus, San Angelo, Texas.

Root QUALITY BEE SUPPLIES

BUY WITH CONFIDENCE

Root QUALITY BEE SUPPLIES

For Michigan

For Michigan

ROOT HIVES have the preferred style cuts and dimensions and are the standard the world over.

Our stock is LIMITED; anticipate your 1946 needs and PLACE YOUR ORDER EARLY!

If you need HONEY CANS, GLASS JARS, or LABELS, we are prepared to give you QUICK SERVICE FROM LANSING.

Prepare For Winter

Inexpensive packing paper, 500 sq. ft. roll $1.25
USE IT TWICE BRAND packing paper, 500 sq. ft. roll 1.95

Beeswax Wanted!

Cash price, 41½c lb. Trade Price, 43½c lb. Freight paid on 100 lbs. or more.

M. J. BECK COMPANY

Successor to M. H. Hunt and Son

510 N. Cedar St. Box 7 Lansing 1, Mich.

BETTER-BRED QUEENS—Three-Banded Italians

We appreciate your business in the past and solicit your future business on the merits of our service and quality. Let us quote you our 1946 prices.

CALVERT APIARIES, Calvert, Alabama

One of The Best Periods For Safe Queen Introudction is After Brood Rearing Has Ceased!

When you buy daughters of queens bred for resistance to AFB consider these factors:

1. Scientifically selected and tested mother queens every year.
2. Reared under rigid rules for high grade daughters with selected mating.
3. Samples from stock queens tested for resistance and performance.

You get these features when you buy from the Iowa Beekeepers' Association.

Prices: 1-9, $1.50; 10-49, $1.40; 50-99, $1.30; 100-up, $1.25.

A supply of queens for fall requeening is now available.

Iowa Beekeepers' Association

State House, Des Moines 19, Ia.

QUEENS!

GENTLE LEATHER ITALIANS
All Breeders Northern Record Producers.

Our system of holding queens in large two-frame nuclei until egg laying ability and pattern is proven assures you of the finest queens to be had at any price.

ANY NUMBER $1.25

Please book your orders for 1946 as soon as possible and help us to help you. Prices and terms will be announced later.

The Rich Honey Farms

JEANERETTE, LA.

BESSONET'S ITALIAN PACKAGES AND QUEENS

Yes, we are getting ready now for 1946. Continuous improvement in stock and methods will assure more satisfaction. Orders have been rushing in. Have you placed your order for next spring delivery?

Some Queens available at previously advertised prices!

BESSONET BEE COMPANY

DONALDSONVILLE, LA.

AMERICAN BEE JOURNAL

Hamilton, Illinois

Oldest bee journal in the English language. Keep up on markets, practices, scientific data, regulations, plant possibilities.

Two years, $1.50—Order today!

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor, P. O. Box 20 West Maitland New South Wales Australia

HONEY PRODUCTION AND WINTERING IN ALBERTA

(Continued from page 411)

created a demand for breeding stock therefrom. That is a job the southern bee breeder can not do for us. What chance is there that we can do it for ourselves?

C. B. Gooderham, Dominion Apiarist, reports that the results of wintering at Ottawa suggest the presence of a variable factor, a difference in vigor, between the strains of bees used. In Alberta, the same adaptation potentialities have been noted. Definite changes take place in the characteristics of bees retained without selection for a few years. Among Italians, for instance, the darker strains seem to predominate over the lighter. S. O. Hillerud observed that queens capable of building up excessively strong colonies, produce shortlived stock that do not winter well. He suggests queens supporting seven frames of brood as a basis for developing hardy stock.

In Alberta, the honey industry has developed tremendously in the war years. Commercial production has been undertaken to some extent in all regions of the province. Permanence and security after the war will depend a great deal upon the expenses of apiary operation in relation to yield. In Alberta, whether to winter or depend on package bees is a question to which there is not likely to be a ready answer for many years. The situation requires that we should simultaneously seek improvement in strains of bees available for package or wintered-colony honey production. Action with respect to the latter is entirely up to ourselves and should be undertaken without delay. It might be found that adaptations made at Lethbridge, Edmonton, and Peace River would vary considerably, the character of the honey flow as well as temperatures having an influence. In Russia, natural selection operating for a long time resulted in strains of bees definitely adapted to the climatic zones in which they are now found. We want adaptation to climate, too, but equally important are productiveness, gentleness, and other attributes that make beekeeping profitable. Natural selection will not result in a strain of bees with all these qualities, but they might be achieved with a high degree of success through establishment of a comprehensive bee-breeding program.

The Future Honey Market is Being Built Today

Aggressive sales promotion efforts of many leading honey packers during the past few years have resulted in a volume of business unequalled in the history of the industry.

Housewives who seldom bought honey heretofore are now buying regularly and in increasingly larger quantities. Commercial users have multiplied tremendously to greatly widen the scope of honey consumption in every part of the United States.

This is a market which energetic merchandising has developed and one which only a sustained marketing program can hold in the months and years to come.

That is why we say the future honey market is being built today.

It is being built by honey packers whose extensive sales promotional activities are popularizing honey both as a food for the table and as a cooking ingredient in the home kitchen and commercial establishment.

It is being built by honey producers who realize the vital importance of CONTINUING to keep large volume distributors supplied with the quality product to which honey users have become accustomed.

As in the case of nearly all food products, profitable marketing of honey is almost entirely a matter of volume distribution, and volume distribution depends upon multiplication of sales outlets.

One of the principal reasons for Sioux Honey's consistent growth through the years, is the Association's carefully prepared merchandising program — a program that has been responsible for the sale of millions of pounds of high quality honey, processed and packed by the Sioux Honey Association under brand names which have become household words in thousands of homes —Sioux Bee, 3 Bees and Clover Maid.

We Invite You To Market Your Honey Through The Sioux Honey Association.

You are invited to become a member of the Association and cooperate with us in our effort to stabilize the beekeeping industry. You can have a share in building tomorrow's honey market by marketing your honey today through the Sioux Honey Association, one of the oldest and best managed cooperative organizations in the industry. Write for information without obligation.

SIOUX HONEY ASSOCIATION

Lima, Ohio **Sioux City, Iowa**

Your Honey is the Best!

Our Motto:

"The Beekeeper is Always Right"

Just bring in your honey and we will pay you the highest possible price plus regular tariff freight rate.

No samples necessary.

If unable to deliver, advise and we will send a truck to pick it up. —We understand beekeepers' problems, having been through the "mill."

You may be sure we are engineering sales in view of the future.

Veils, smokers, hive tools, foundation, etc., available for your convenience.

Now the war is over, your honey is still the best.

MILLER HONEY COMPANY
67 East 33rd South
Salt Lake City, Utah
Phone 6-8103

WOODROW MILLER HONEY COMPANY
1722 West Main Street
Alhambra, California
Phone CUmberland 3-2215

N. E. MILLER HONEY COMPANY
440 West J Street
Colton, California

Honey Containers

We have a complete line of "Utility" style jars with white coated covers, lacquered and wax paper lined.

10-lb. jars per case 4	45c
5-lb. jars per case 6	42c
2-lb. jars per case 12	42c
1-lb. jars per case 24	73c
½-lb. jars per case 24	67c
⅓-lb. jars per case 48	$1.28

Standard square American cans, well seamed and soldered, with 2½" screw cap wax board lined.

Box of 2—60-lb. cans	$1.00
Carton of 24—60-lb. cans	7.44
60-lb. cans in bulk each	.32

5-lb. tin pails, per carton 50 ... $3.35
10-lb. tin pails, per carton 50 ... $4.95
5% discount on tin and glass order of $50.00; 10% discount on tin and glass orders of $100.00.

We also carry a full stock of other honey packages—Comb honey cartons and wrappers.

August Lotz Co.
BOYD, WISCONSIN

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S
Economy Foundation

Not excelled for quality strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons
Rt. 4 Bay City, Mich.

Look for this Sign
When You Want
QUALITY AT LOW COST!

Trade Mk. Reg.
U. S. Pat. Off.

QUEENS
75c each

KELLEY—"The Bee Man"

Young three-banded Italian Queens shipped daily from Paducah. Health certificate with each shipment.

The Walter T. Kelley Co., Paducah, Ky.

REQUEEN WITH THREE-BAND ITALIAN QUEENS OF HIGHEST QUALITY

My breeders are tested for honey producing qualities, non-swarming, long life and gentleness; pure mating guaranteed.

	1-3	4-24	25-up
Young laying queens	$ .85	$ .80	$ .75
Young tested queens	1.70	1.60	1.50

Plenty of queens for immediate shipment.

E. R. RALEY, 710 Altamaha St., Fitzgerald, Ga.

QUEENS 3 KINDS

90c Air Mailed — Send for FREE circular

ITALIANS
Caucasians bred to Italian drones
Daughters of Queens bred for Resistance
2-lb. pkg. bees with queen, $4.00 — 3-lb. pkg. bees with queen, $5.00
Over 25 years a shipper in U.S.A. and Canada

BLUE BONNET APIARIES, Route 2, Box 23, Mercedes, Texas

YES—WE PUT THE

QUALITY IN QUEENS

Three Band Italians

2-lbs., $4.00; 3-lbs., $5.10; each additional pound, $1.10

BOOK YOUR ORDER EARLY WITH

The Anderson Bee Company

OPP. ALABAMA

"HONEY GIRL" ITALIAN

	1 to 3	4 to 11	12 up
QUEENS	90c each	80c each	75c each

100 or more 70c each, will ship in lots to suit your needs.

Twenty odd years of selective breeding for hardiness, productivity and other qualities you will like when you stock "Honey Girl" Italians.

Queens received dead will be replaced if returned promptly in their own cage. Certificate of inspection with each shipment.

St. Romain's "Honey Girl" Apiaries
Moreauville, Louisiana

BUY U. S. VICTORY BONDS

JENSEN'S
"Magnolia State"
QUEENS! QUEENS!
Three Banded Italians
October is the last month in which we will have any queens to offer. The supply will probably not be sufficient for all orders so, "first come, first get."
Orders are fast being booked for 1946, so we suggest you consider your possible spring requirements and book tentatively; you have the privilege of revising your orders later.
We are closing one of our most successful seasons, and many thanks to all of you who have made it possible.
Queens, as long as they last in October, $1.00 each, straight.
JENSEN'S APIARIES
Macon, Miss.

TOO LATE TO CLASSIFY

FOR SALE—Successful package bee business for immediate sale owing to death of owner Morley Pettit. House and shop available if desired. Communicate with Mrs. Morley Pettit, 403 W. 14th St., Tifton, Georgia. Telephone 346.

WANTED — Small packages (5 lbs. or less) of typical honey from any of the following sources: Alfalfa, Gallberry, Huajilla-Catsclaw; Heartsease; Milkweed; Raspberry; Sourwood; Spanish Needle; Willowherb. State size of package and price. Lucius Tuttle, Fabyan, Conn.

SNAPSHOTS OF THE MICHIGAN MEETING

(Continued from page 412)

stalled still later, may not get enough honey to winter. Everything depends upon early packages and on good queens. When one colony produces 400 pounds of surplus and the next one, having exactly the same treatment, only five pounds, the difference is in the queen.

Beekeepers will have to do more free distribution of sweet clover seed in order to improve their localities.

George Kirkpatrick, of Kalkaska, Michigan, has attended at least one beekeepers' meeting a year for the past 52 years. Hale and hearty, at 86, Mr. Kirkpatrick can be called the Dean of northern Michigan honey producers.

NOW BOOKING
1946 Packages
"Dixie's Best" (Italians)
TANNER BEE CO.
Laurel, Miss.

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES
1 to 25, $1.25; 26 on up, $1.10—From Imported Strains.
¼ books orders. Balance before shipping. Add 5 cents for all queens by air.
(All Queens after June 15, $1.00)
J. B. TATE & SON
1029 No. 4th St., Nashville 7, Tenn. **Tel. No. 34509M**

CARNIOLAN QUEENS
No More Queens for Balance of Season!
PLAN NOW for 1946 Season. Include CARNIOLANS
Ephardt's Honey Farms, Plaucheville, La.

SUNKIST
BEES **QUEENS**
Now that final victory has been achieved, the needs of the people will begin to be filled for Industry and Farm are changing to peace time requirements. This should not affect the honey producer as to loss of high prices as sugar is one item that appears on the short list.
There will probably be an active demand for packages and queens next season. We are booking orders subject to prices quoted later in the season. We offer select Italian, three-banded queens and bees. Full weight, live delivery, and health certificate. Send your inquiries.
SUNKIST BEE COMPANY
Route 2 Box 9 **Houma, Louisiana**

ANGLES IN A CELL OF HONEY-COMB

(Continued from page 413)

reason, but as the years went by I was forced to grant them no reason at all. However, the bee has something as wonderful as reason—she has instinct. To me the developed instinct of the bee is even more wonderful than reason. Why? Because the parents of the worker bee do not do what the workers do. How in that case can instinct be handed down? I have an answer, but I shall not give it for it would tax your credulity too much. It makes my own head swim to think about the wonder of it.

Norwichtown, Conn.

CHOICE ITALIAN QUEENS

and Package Bees

Thanks a Million, Folks!

We cannot accept any more orders for package bees and queens for this season.

CLIFTON APIARIES

P. O. Box 684 Oroville, Calif.

Honey Producers

in making your plans for the coming season of 1946 keep in mind that

Rossman & Long

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